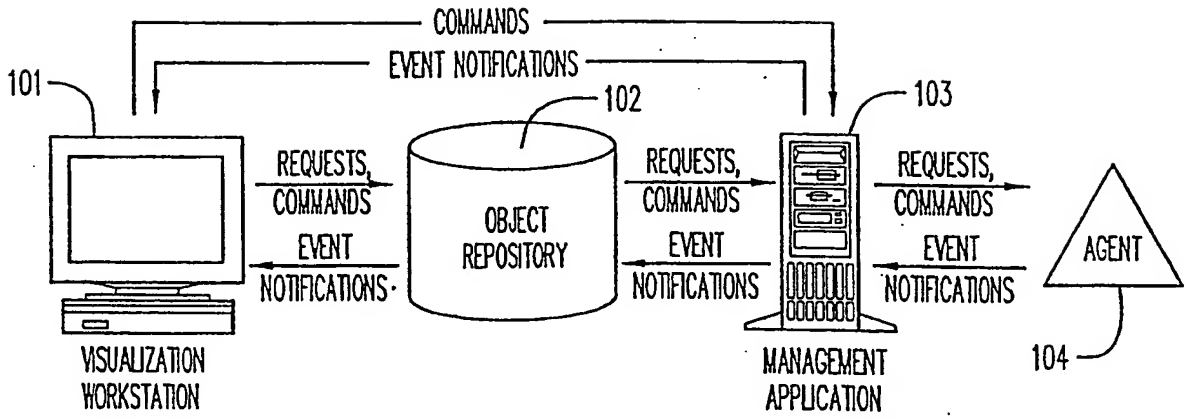

COMMANDS
EVENT NOTIFICATIONS
101
102
103
REQUESTS, COMMANDS
EVENT NOTIFICATIONS
OBJECT REPOSITORY
REQUESTS, COMMANDS
EVENT NOTIFICATIONS
REQUESTS, COMMANDS
EVENT NOTIFICATIONS
AGENT
VISUALIZATION WORKSTATION
MANAGEMENT APPLICATION
104

FIG. 1

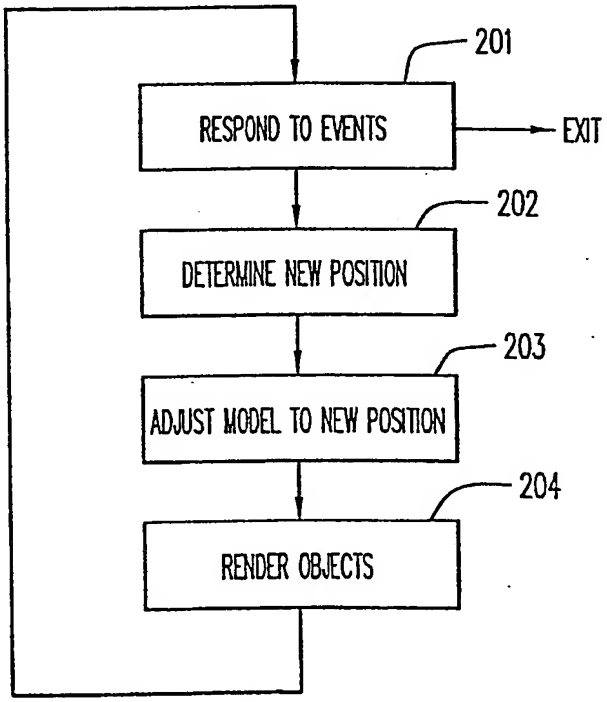

201
RESPOND TO EVENTS
EXIT
202
DETERMINE NEW POSITION
203
ADJUST MODEL TO NEW POSITION
204
RENDER OBJECTS

FIG. 2

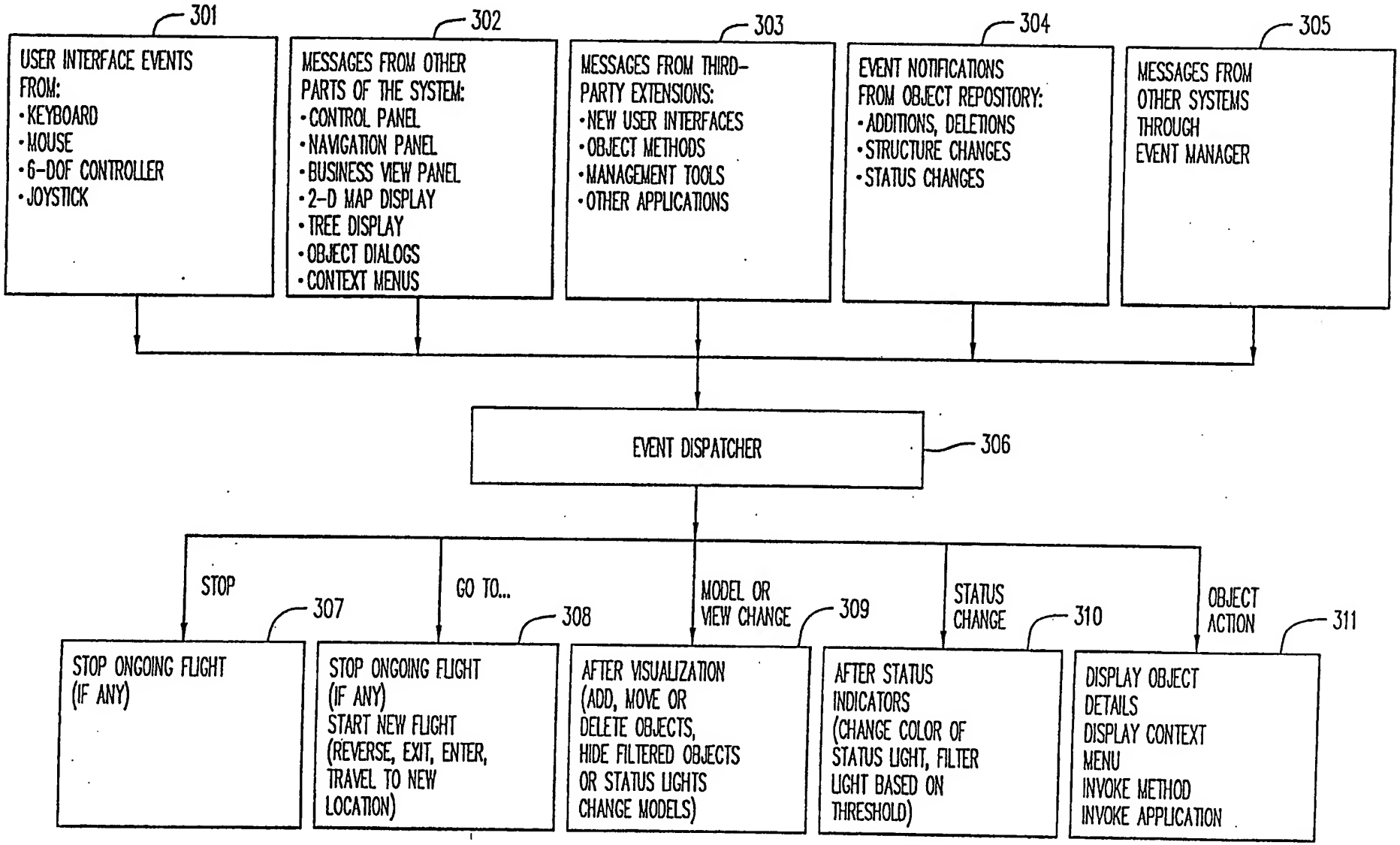

301
USER INTERFACE EVENTS FROM:
• KEYBOARD
• MOUSE
• 6-DOF CONTROLLER
• JOYSTICK
302
MESSAGES FROM OTHER PARTS OF THE SYSTEM:
• CONTROL PANEL
• NAVIGATION PANEL
• BUSINESS VIEW PANEL
• 2-D MAP DISPLAY
• TREE DISPLAY
• OBJECT DIALOGS
• CONTEXT MENUS
303
MESSAGES FROM THIRD-PARTY EXTENSIONS:
• NEW USER INTERFACES
• OBJECT METHODS
• MANAGEMENT TOOLS
• OTHER APPLICATIONS
304
EVENT NOTIFICATIONS FROM OBJECT REPOSITORY:
• ADDITIONS, DELETIONS
• STRUCTURE CHANGES
• STATUS CHANGES
305
MESSAGES FROM OTHER SYSTEMS THROUGH EVENT MANAGER
EVENT DISPATCHER
306
STOP
GO TO...
MODEL OR VIEW CHANGE
STATUS CHANGE
OBJECT ACTION
307
STOP ONGOING FLIGHT (IF ANY)
308
STOP ONGOING FLIGHT (IF ANY)
START NEW FLIGHT (REVERSE, EXIT, ENTER, TRAVEL TO NEW LOCATION)
309
AFTER VISUALIZATION (ADD, MOVE OR DELETE OBJECTS, HIDE FILTERED OBJECTS OR STATUS LIGHTS CHANGE MODELS)
310
AFTER STATUS INDICATORS (CHANGE COLOR OF STATUS LIGHT, FILTER LIGHT BASED ON THRESHOLD)
311
DISPLAY OBJECT DETAILS
DISPLAY CONTEXT MENU
INVOKE METHOD
INVOKE APPLICATION

FIG. 3

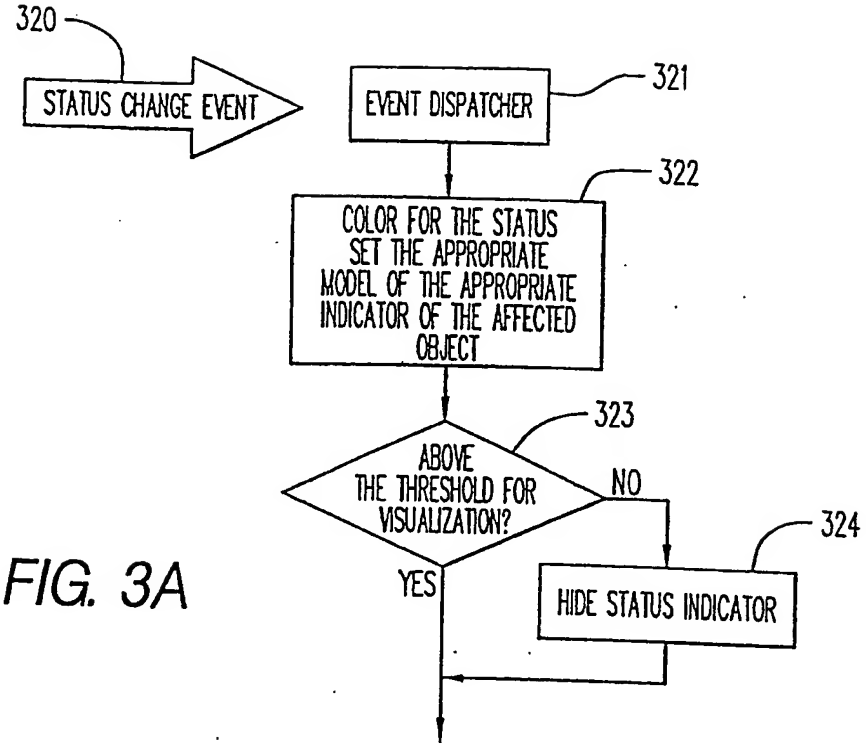

320
STATUS CHANGE EVENT
EVENT DISPATCHER
321
322
COLOR FOR THE STATUS SET THE APPROPRIATE MODEL OF THE APPROPRIATE INDICATOR OF THE AFFECTED OBJECT
323
ABOVE THE THRESHOLD FOR VISUALIZATION?
NO
YES
324
HIDE STATUS INDICATOR

FIG. 3A

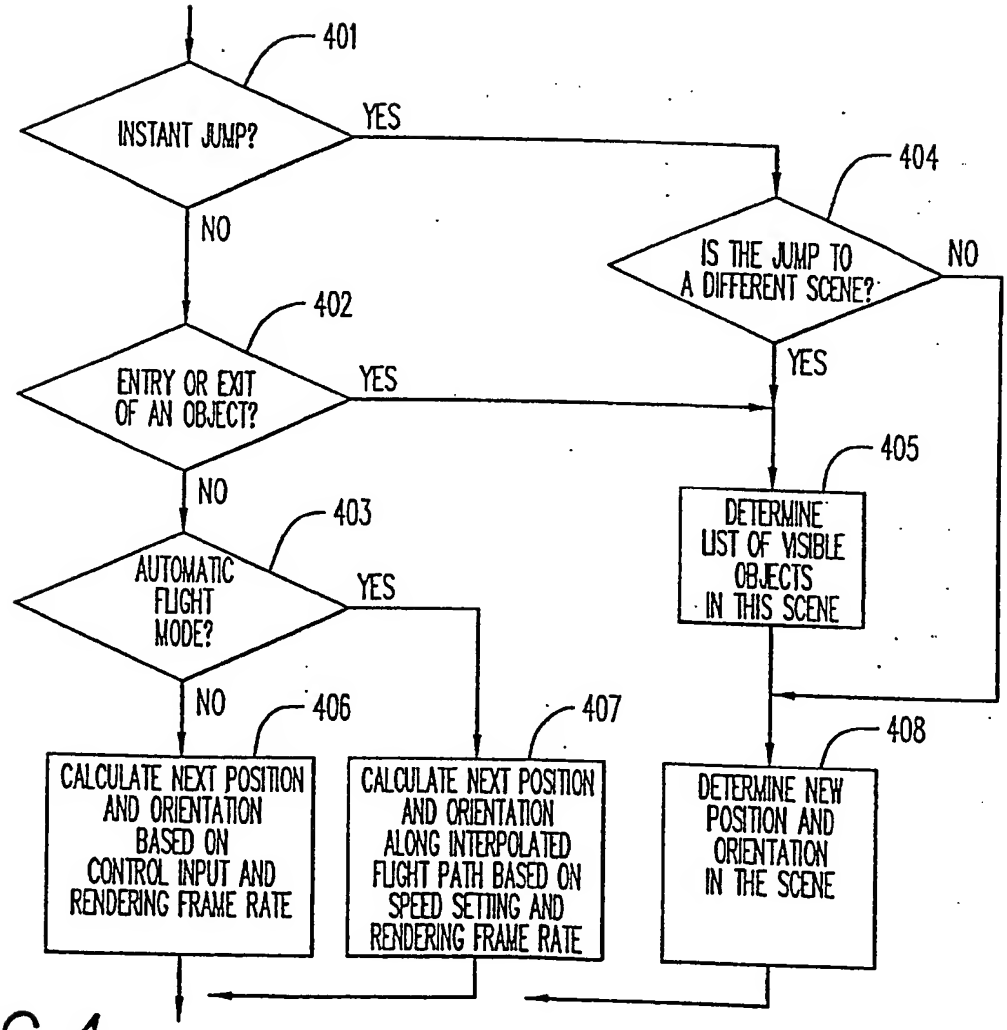

401
INSTANT JUMP?
YES
NO
404
IS THE JUMP TO A DIFFERENT SCENE?
NO
YES
402
ENTRY OR EXIT OF AN OBJECT?
YES
NO
405
DETERMINE LIST OF VISIBLE OBJECTS IN THIS SCENE
403
AUTOMATIC FLIGHT MODE?
YES
NO
406
407
408
CALCULATE NEXT POSITION AND ORIENTATION BASED ON CONTROL INPUT AND RENDERING FRAME RATE
CALCULATE NEXT POSITION AND ORIENTATION ALONG INTERPOLATED FLIGHT PATH BASED ON SPEED SETTING AND RENDERING FRAME RATE
DETERMINE NEW POSITION AND ORIENTATION IN THE SCENE

FIG. 4

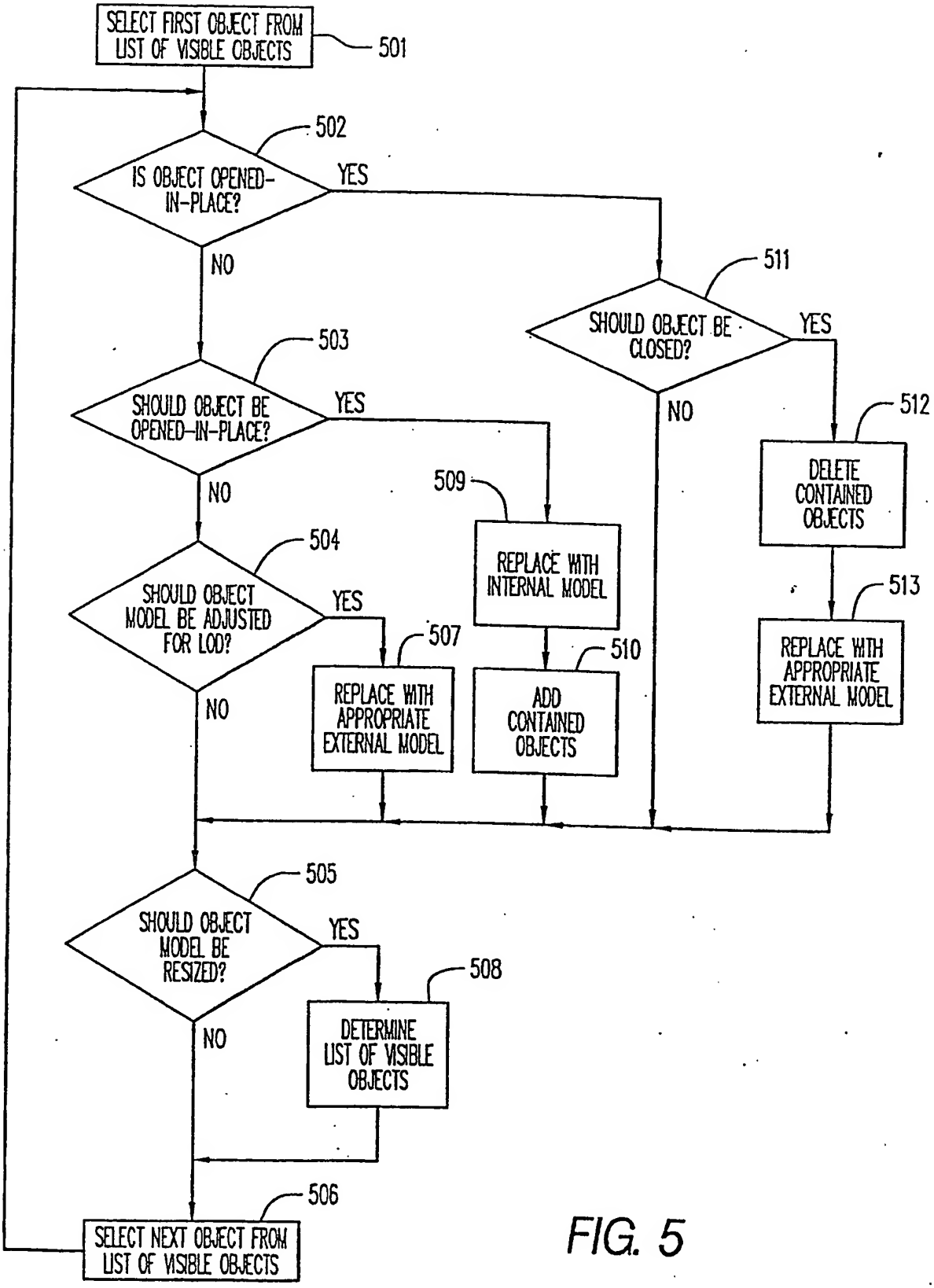

SELECT FIRST OBJECT FROM LIST OF VISIBLE OBJECTS
501
IS OBJECT OPENED-IN-PLACE?
502
YES
NO
SHOULD OBJECT BE CLOSED?
511
YES
NO
SHOULD OBJECT BE OPENED-IN-PLACE?
503
YES
NO
DELETE CONTAINED OBJECTS
512
REPLACE WITH INTERNAL MODEL
509
SHOULD OBJECT MODEL BE ADJUSTED FOR LOD?
504
YES
NO
REPLACE WITH APPROPRIATE EXTERNAL MODEL
507
ADD CONTAINED OBJECTS
510
REPLACE WITH APPROPRIATE EXTERNAL MODEL
513
SHOULD OBJECT MODEL BE RESIZED?
505
YES
NO
DETERMINE LIST OF VISIBLE OBJECTS
508
SELECT NEXT OBJECT FROM LIST OF VISIBLE OBJECTS
506

FIG. 5

FIG. 6

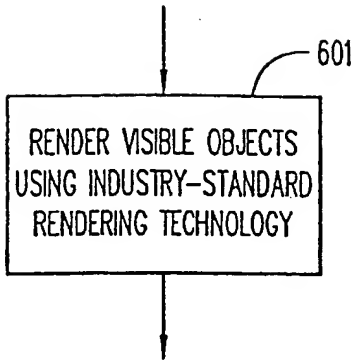


FIG. 7

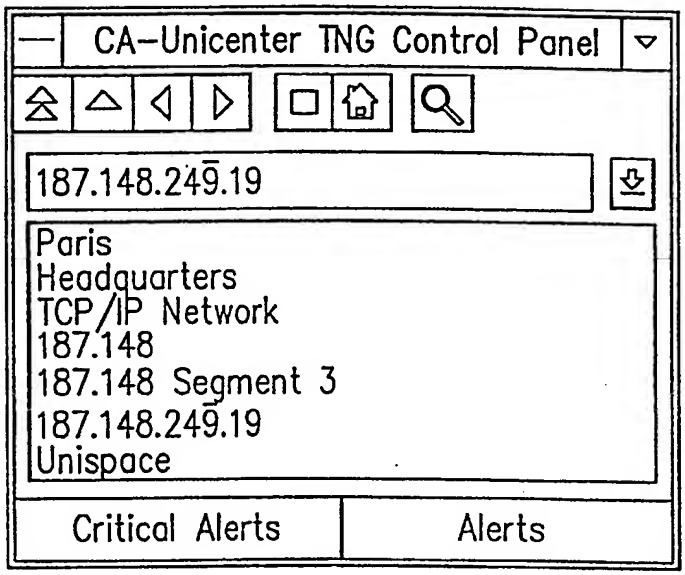
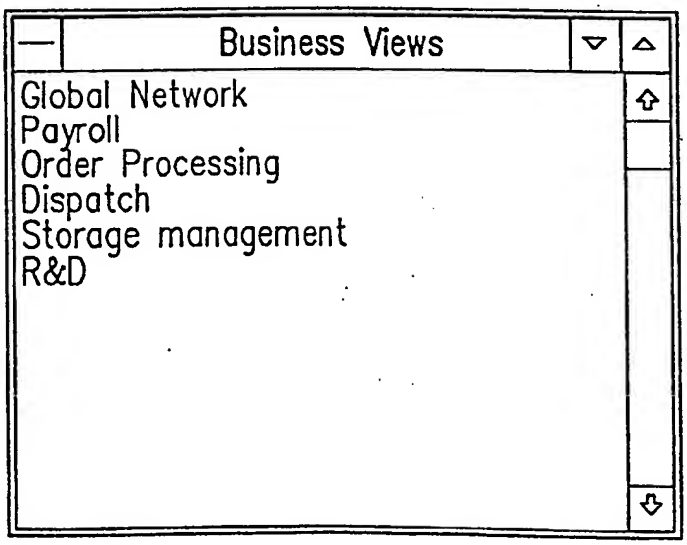


FIG. 8



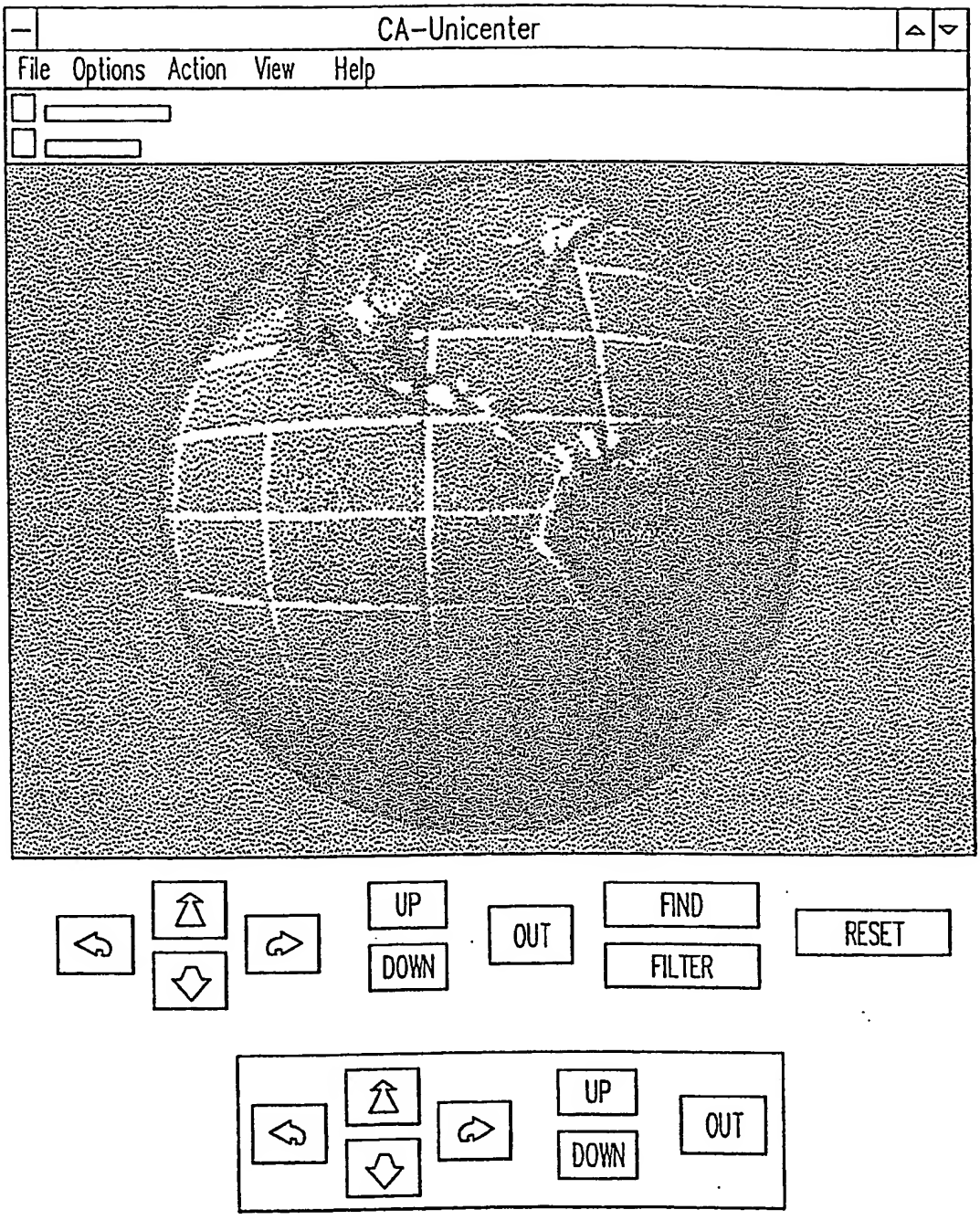

CA-Unicenter
File Options Action View Help
UP
DOWN
OUT
FIND
FILTER
RESET
UP
DOWN
OUT

FIG. 9

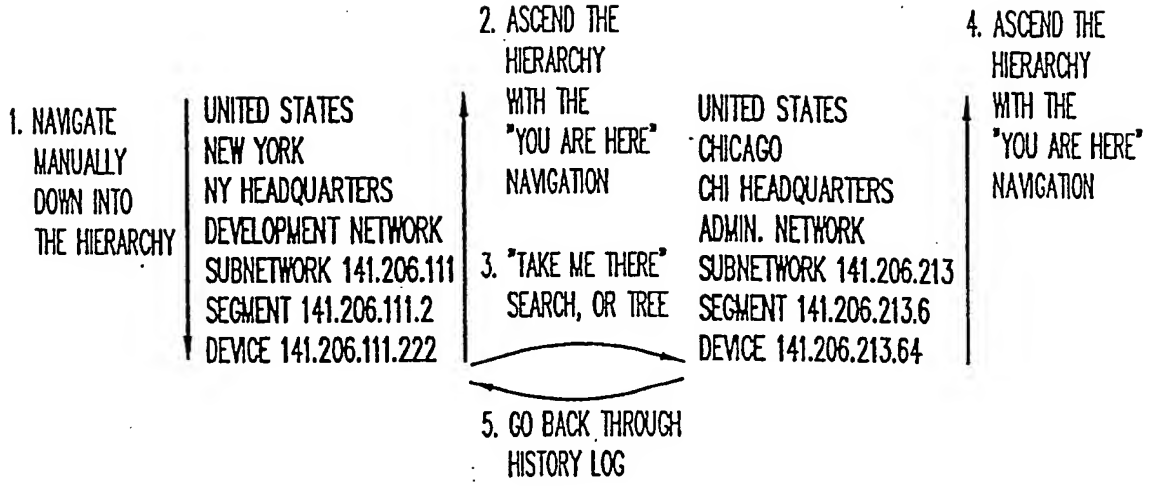

1. NAVIGATE MANUALLY DOWN INTO THE HIERARCHY
UNITED STATES
NEW YORK
NY HEADQUARTERS
DEVELOPMENT NETWORK
SUBNETWORK 141.206.111
SEGMENT 141.206.111.2
DEVICE 141.206.111.222
2. ASCEND THE HIERARCHY WITH THE "YOU ARE HERE" NAVIGATION
3. "TAKE ME THERE" SEARCH, OR TREE
UNITED STATES
CHICAGO
CHI HEADQUARTERS
ADMIN. NETWORK
SUBNETWORK 141.206.213
SEGMENT 141.206.213.6
DEVICE 141.206.213.64
4. ASCEND THE HIERARCHY WITH THE "YOU ARE HERE" NAVIGATION
5. GO BACK THROUGH HISTORY LOG

FIG. 9A

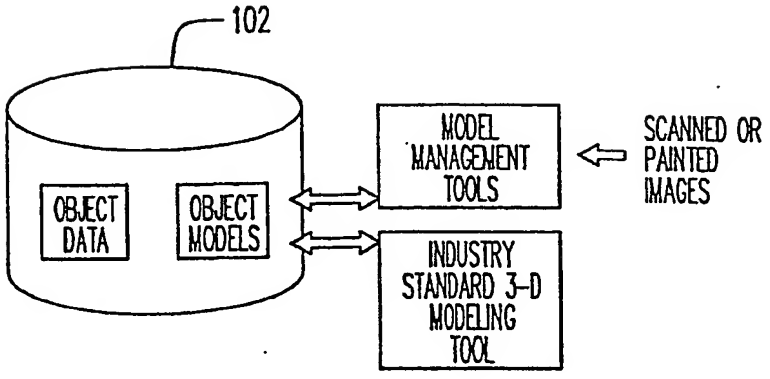

102
OBJECT DATA
OBJECT MODELS
MODEL MANAGEMENT TOOLS
SCANNED OR PAINTED IMAGES
INDUSTRY STANDARD 3-D MODELING TOOL

FIG. 10

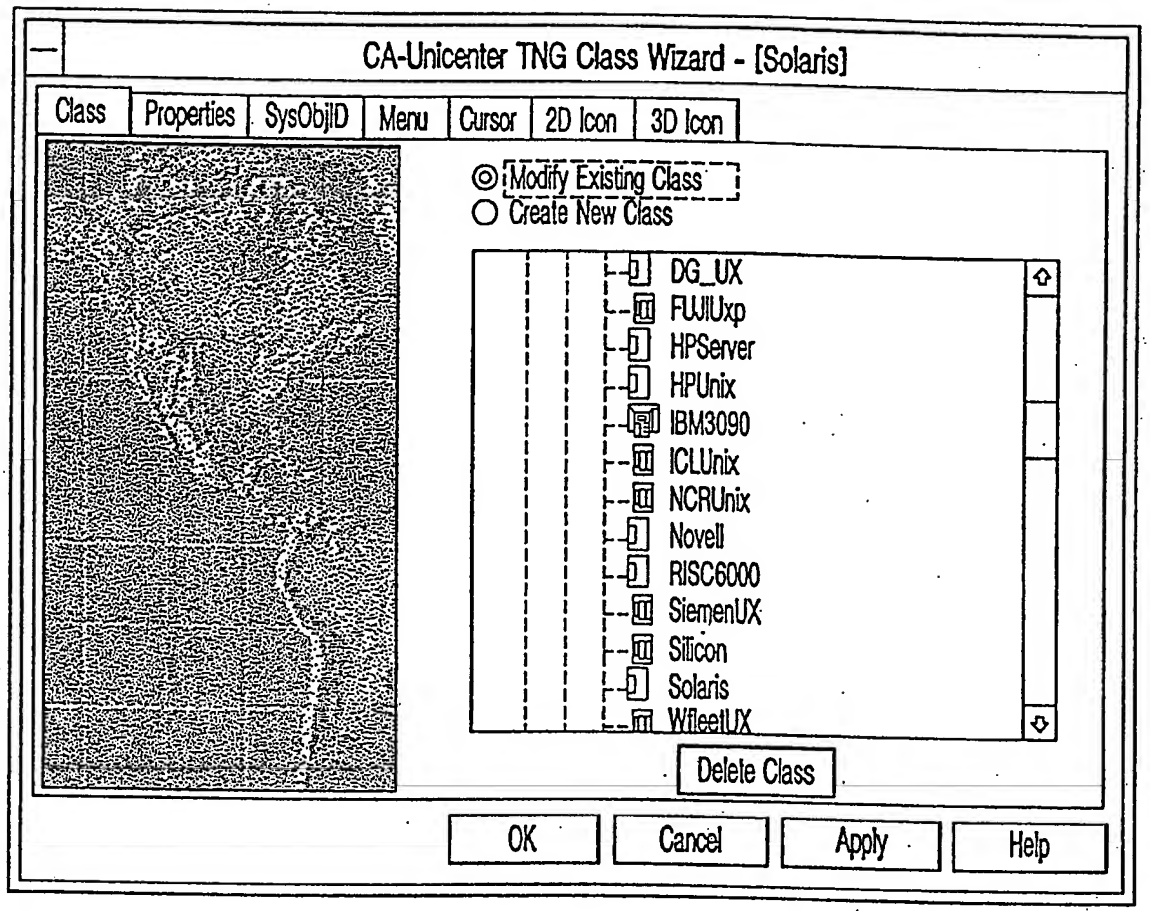

CA-Unicenter TNG Class Wizard - [Solaris]
Class
Properties
SysObjID
Menu
Cursor
2D Icon
3D Icon
Modify Existing Class
Create New Class
DG_UX
FUJIUxp
HPServer
HPUnix
IBM3090
ICLUnix
NCRUnix
Novell
RISC6000
SiemenUX
Silicon
Solaris
WfleetUX
Delete Class
OK
Cancel
Apply
Help

FIG. 10A

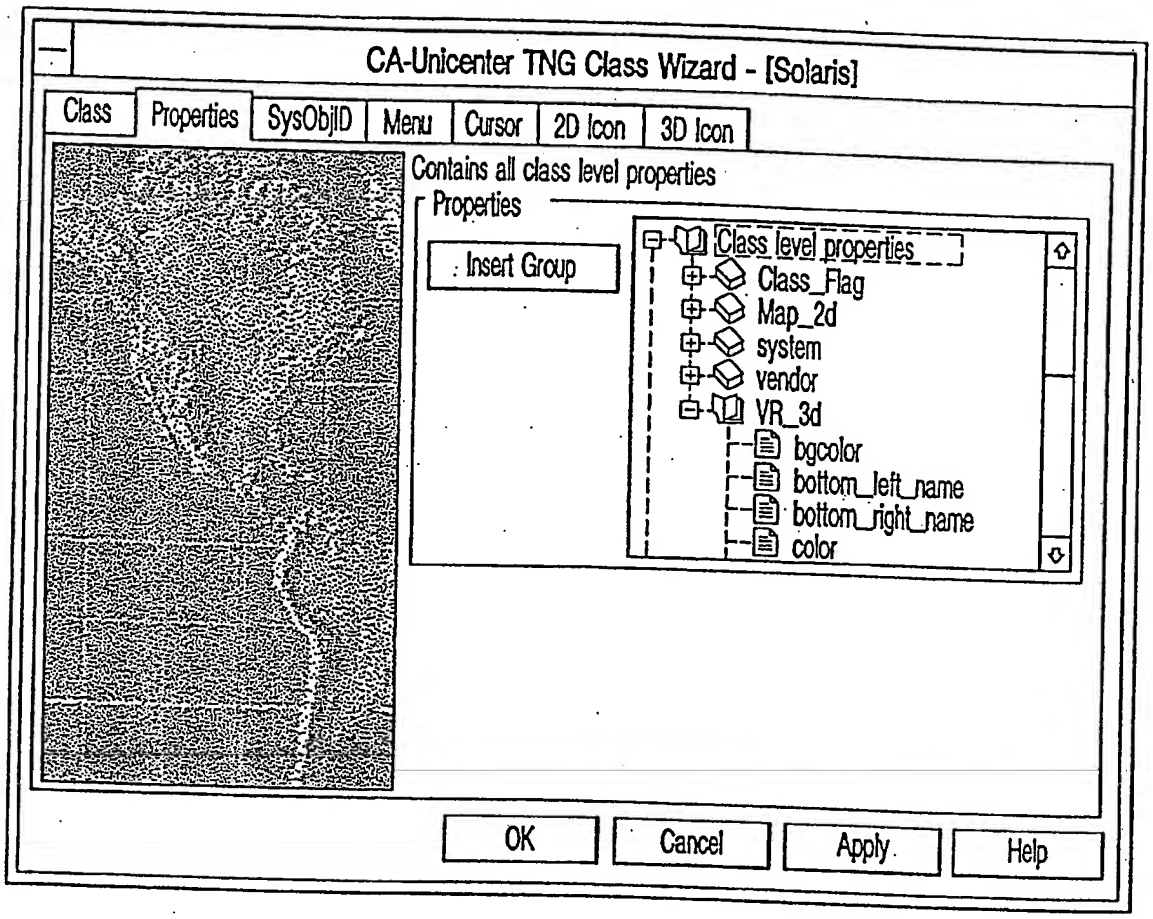

CA-Unicenter TNG Class Wizard - [Solaris]
Class
Properties
SysObjID
Menu
Cursor
2D Icon
3D Icon
Contains all class level properties
Properties
Insert Group
Class level properties
Class_Flag
Map_2d
system
vendor
VR_3d
bgcolor
bottom_left_name
bottom_right_name
color
OK
Cancel
Apply
Help

FIG. 10B

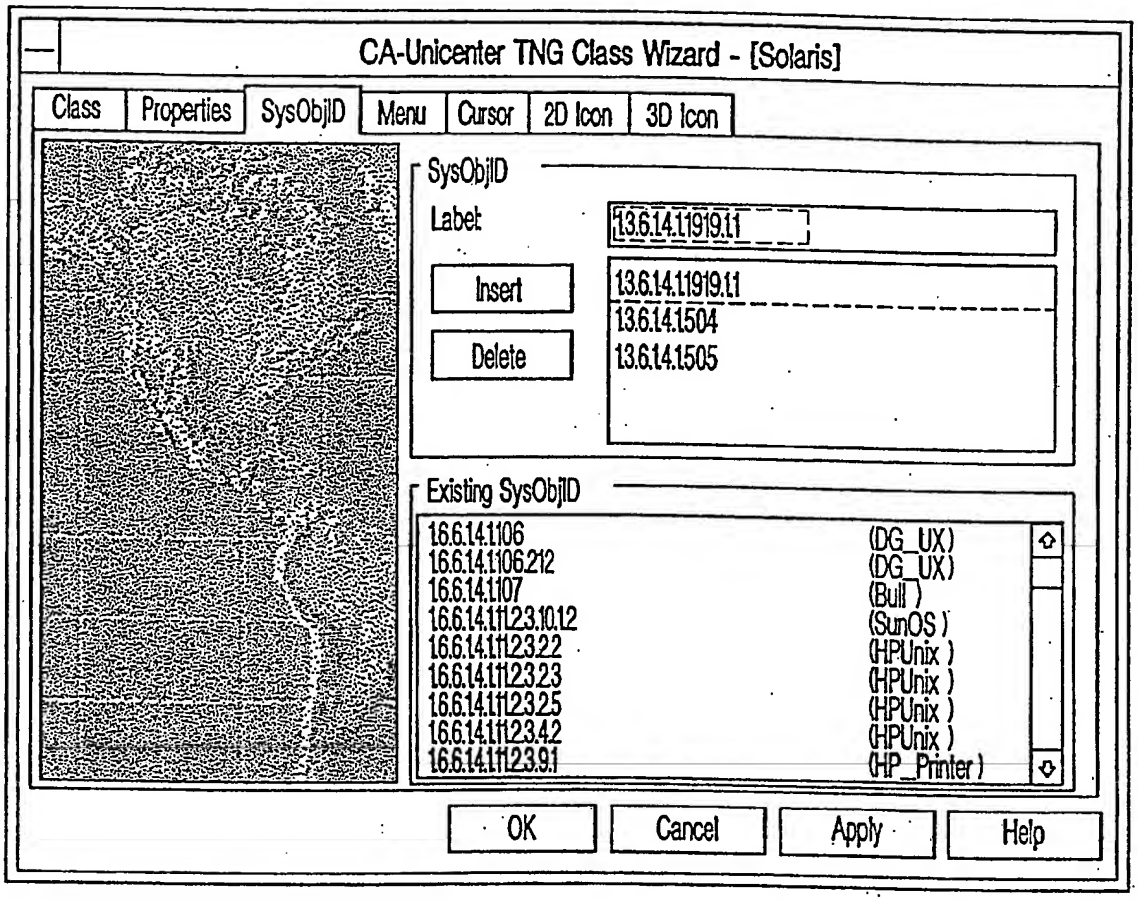

CA-Unicenter TNG Class Wizard - [Solaris]
Class
Properties
SysObjID
Menu
Cursor
2D Icon
3D Icon
SysObjID
Label:
1.3.6.1.4.1.1919.1.1
Insert
Delete
1.3.6.1.4.1.1919.1.1
1.3.6.1.4.1.1504
1.3.6.1.4.1.1505
Existing SysObjID
1.6.6.1.4.1.106 (DG_UX)
1.6.6.1.4.1.106.212 (DG_UX)
1.6.6.1.4.1.107 (Bull)
1.6.6.1.4.1.1123.10.12 (SunOS)
1.6.6.1.4.1.1123.2.2 (HPUnix)
1.6.6.1.4.1.1123.2.3 (HPUnix)
1.6.6.1.4.1.1123.2.5 (HPUnix)
1.6.6.1.4.1.1123.4.2 (HPUnix)
1.6.6.1.4.1.1123.9.1 (HP_Printer)
OK
Cancel
Apply
Help

FIG. 10C

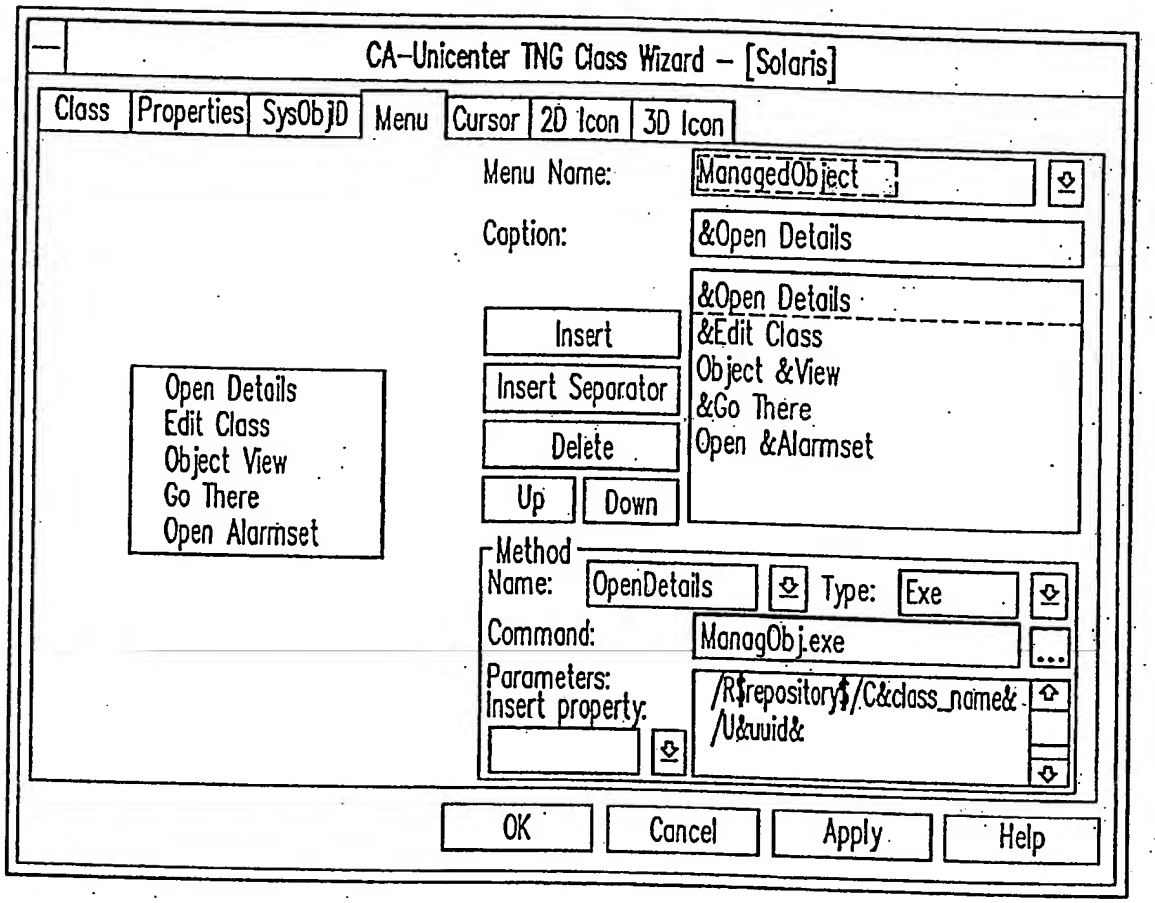

CA-Unicenter TNG Class Wizard – [Solaris]
Class
Properties
SysObjID
Menu
Cursor
2D Icon
3D Icon
Menu Name:
ManagedObject
Caption:
&Open Details
Insert
Insert Separator
Delete
Up
Down
&Open Details
&Edit Class
Object &View
&Go There
Open &Alarmset
Open Details
Edit Class
Object View
Go There
Open Alarmset
Method
Name:
OpenDetails
Type:
Exe
Command:
ManagObj.exe
Parameters:
Insert property:
/R$repository$/C&class_name&
/U&uuid&
OK
Cancel
Apply
Help

FIG. 10D

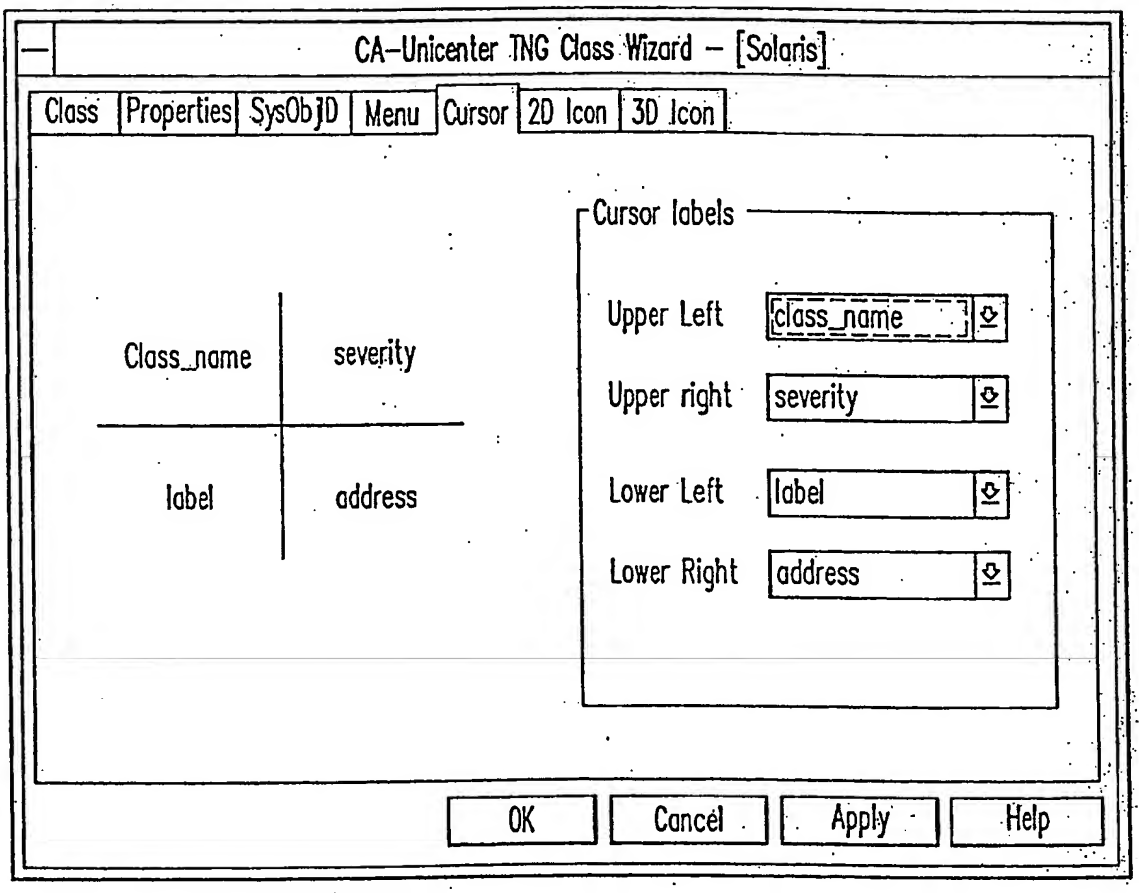

CA-Unicenter TNG Class Wizard – [Solaris]
Class
Properties
SysObjID
Menu
Cursor
2D Icon
3D Icon
Class_name
severity
label
address
Cursor labels
Upper Left
class_name
Upper right
severity
Lower Left
label
Lower Right
address
OK
Cancel
Apply
Help

FIG. 10E

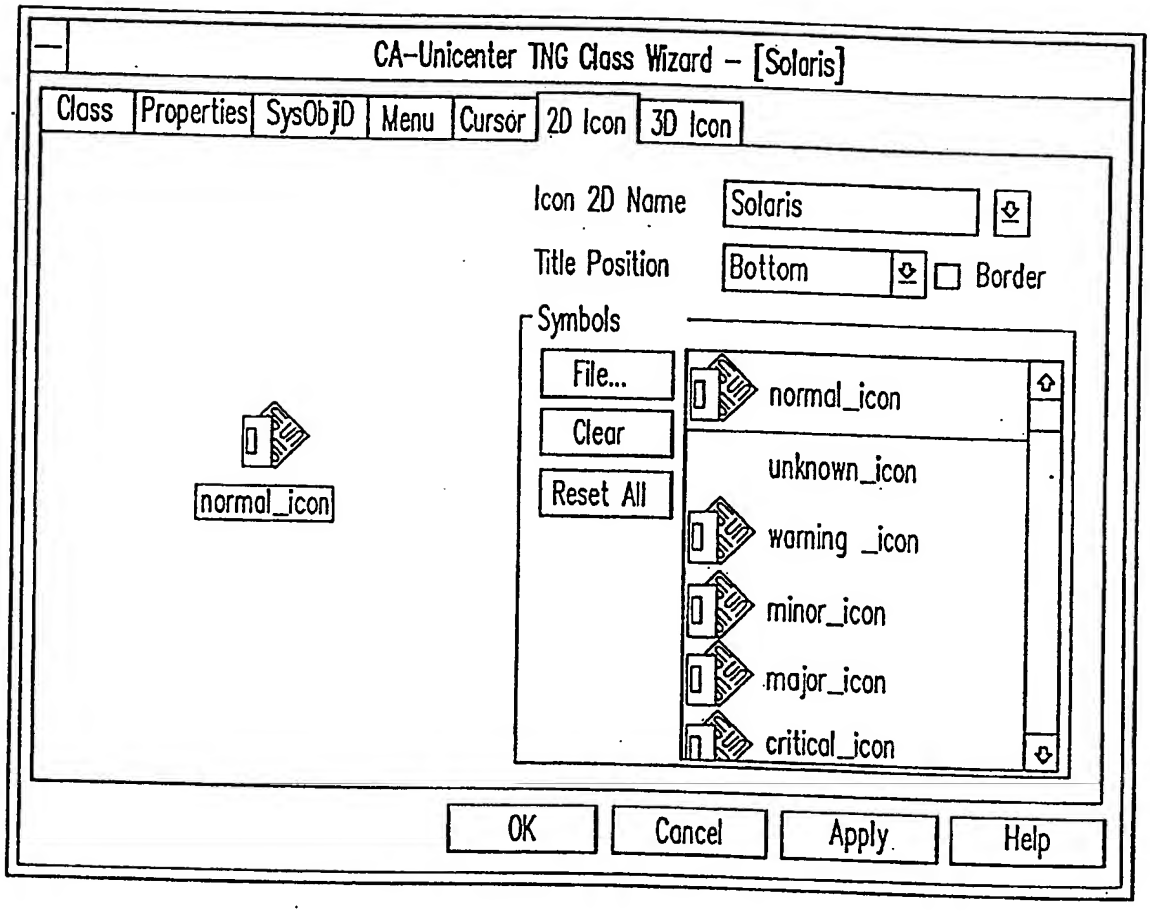

CA-Unicenter TNG Class Wizard – [Solaris]
Class
Properties
SysObjID
Menu
Cursor
2D Icon
3D Icon
Icon 2D Name
Solaris
Title Position
Bottom
Border
Symbols
File...
Clear
Reset All
normal_icon
unknown_icon
warning _icon
minor_icon
major_icon
critical_icon
normal_icon
OK
Cancel
Apply
Help

FIG. 10F

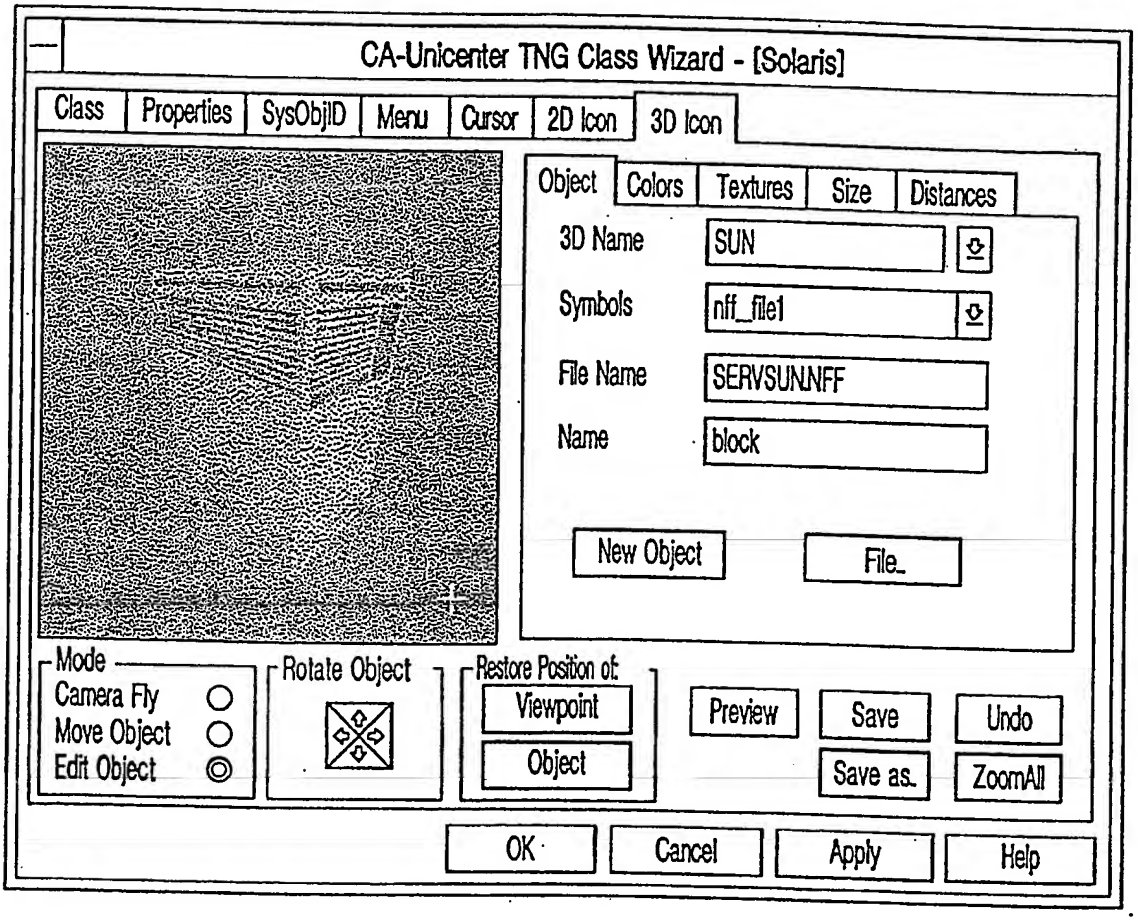

CA-Unicenter TNG Class Wizard - [Solaris]
Class
Properties
SysObjID
Menu
Cursor
2D Icon
3D Icon
Object
Colors
Textures
Size
Distances
3D Name
SUN
Symbols
nff_file1
File Name
SERVSUN.NFF
Name
block
New Object
File_
Mode
Camera Fly
Move Object
Edit Object
Rotate Object
Restore Position of:
Viewpoint
Object
Preview
Save
Undo
Save as_
ZoomAll
OK
Cancel
Apply
Help

FIG. 10G

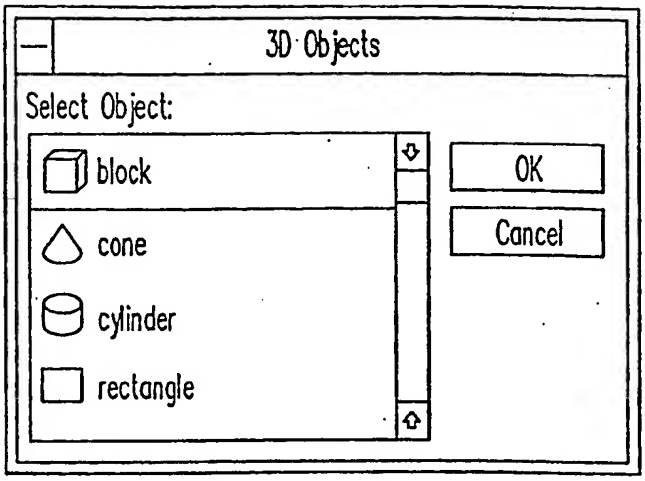


FIG. 10H

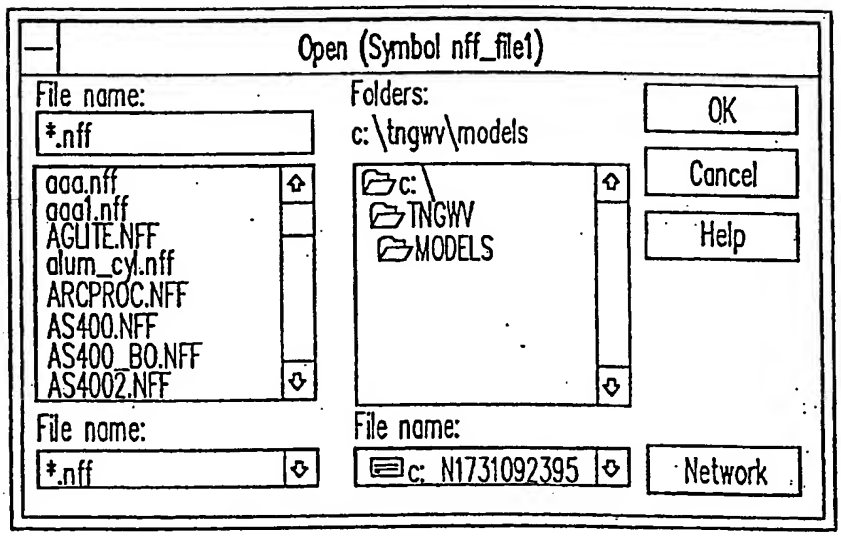


FIG. 10I

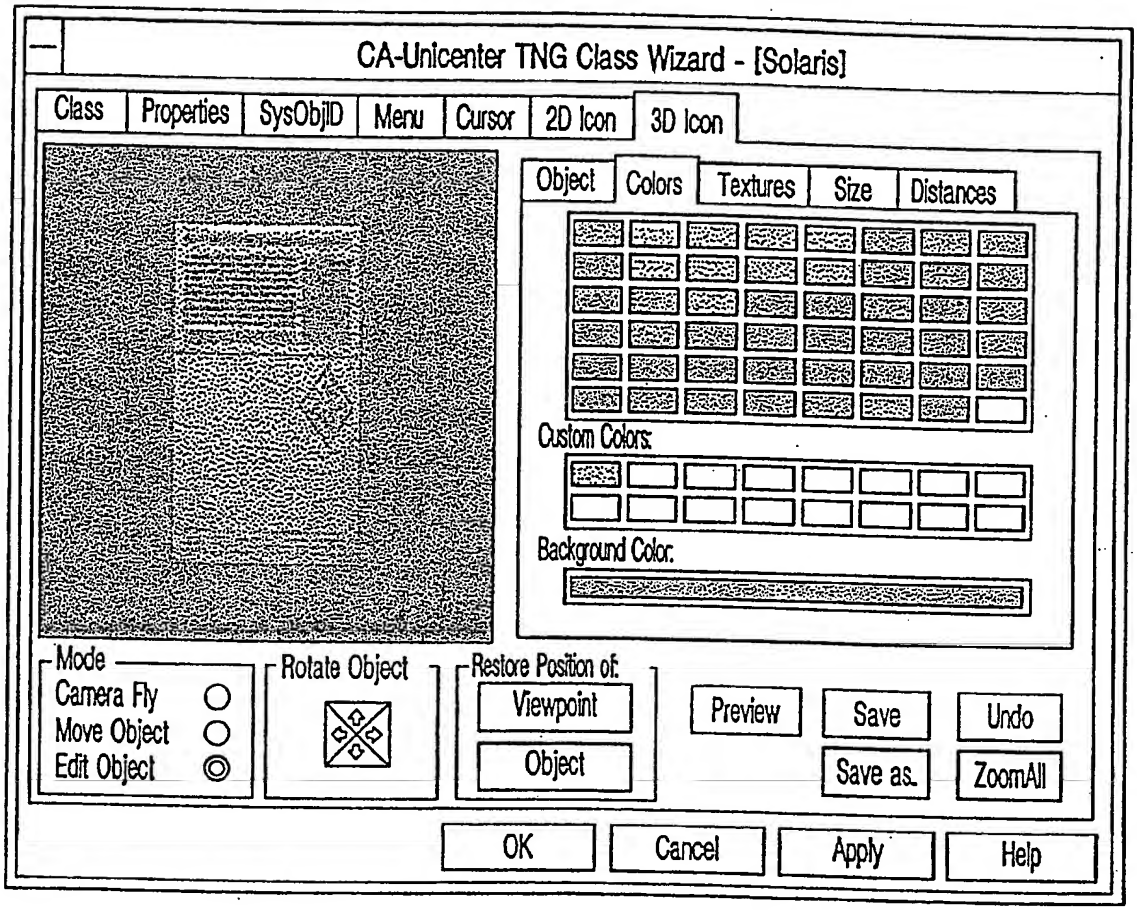

CA-Unicenter TNG Class Wizard - [Solaris]
Class
Properties
SysObjID
Menu
Cursor
2D Icon
3D Icon
Object
Colors
Textures
Size
Distances
Custom Colors:
Background Color:
Mode
Camera Fly
Move Object
Edit Object
Rotate Object
Restore Position of:
Viewpoint
Object
Preview
Save
Undo
Save as..
ZoomAll
OK
Cancel
Apply
Help

FIG. 10J

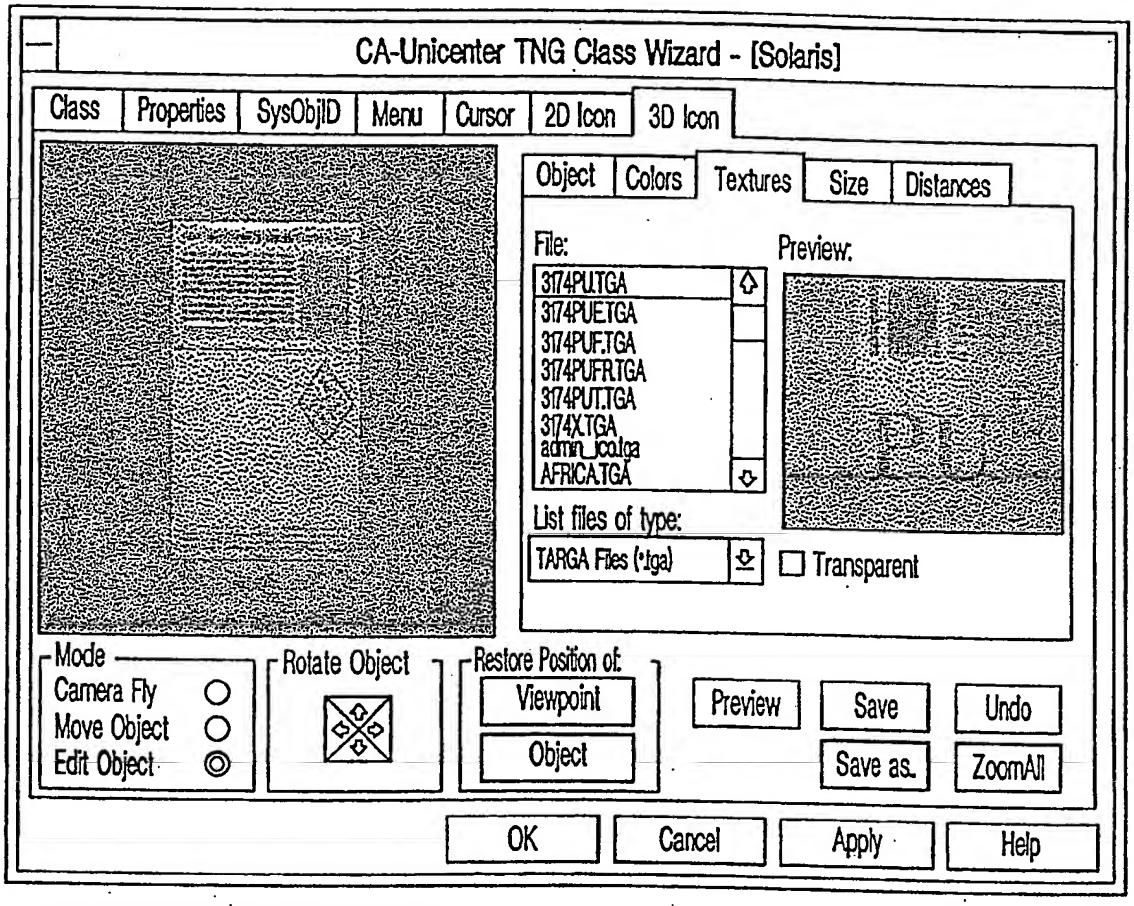

CA-Unicenter TNG Class Wizard - [Solaris]
Class
Properties
SysObjID
Menu
Cursor
2D Icon
3D Icon
Object
Colors
Textures
Size
Distances
File:
Preview:
3174PUT.TGA
3174PUE.TGA
3174PUF.TGA
3174PUFR.TGA
3174PUT.TGA
3174XT.TGA
admin_ico.tga
AFRICA.TGA
List files of type:
TARGA Files (*.tga)
Transparent
Mode
Camera Fly
Move Object
Edit Object
Rotate Object
Restore Position of:
Viewpoint
Object
Preview
Save
Undo
Save as..
ZoomAll
OK
Cancel
Apply
Help

FIG. 10K

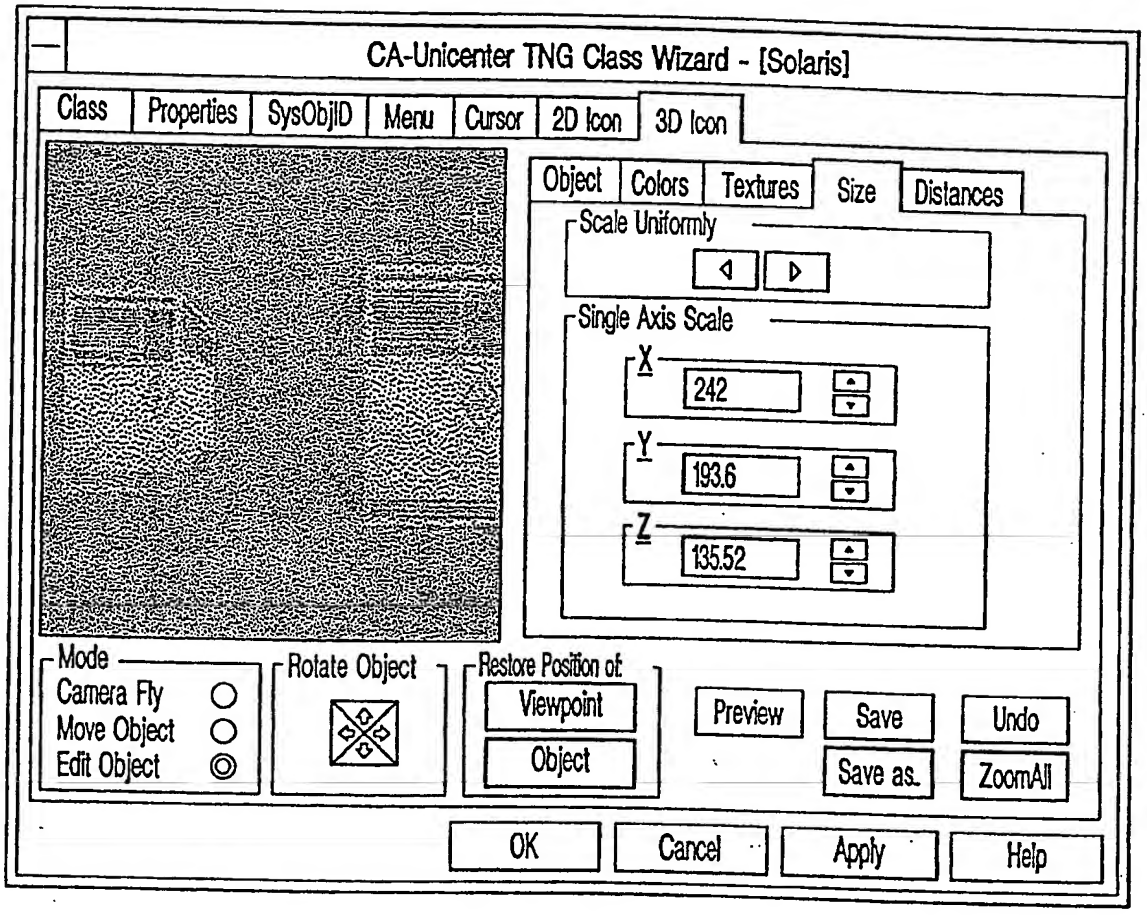

CA-Unicenter TNG Class Wizard - [Solaris]
Class
Properties
SysObjID
Menu
Cursor
2D Icon
3D Icon
Object
Colors
Textures
Size
Distances
Scale Uniformly
Single Axis Scale
X
242
Y
193.6
Z
135.52
Mode
Camera Fly
Move Object
Edit Object
Rotate Object
Restore Position of:
Viewpoint
Object
Preview
Save
Undo
Save as..
ZoomAll
OK
Cancel
Apply
Help

FIG. 10L

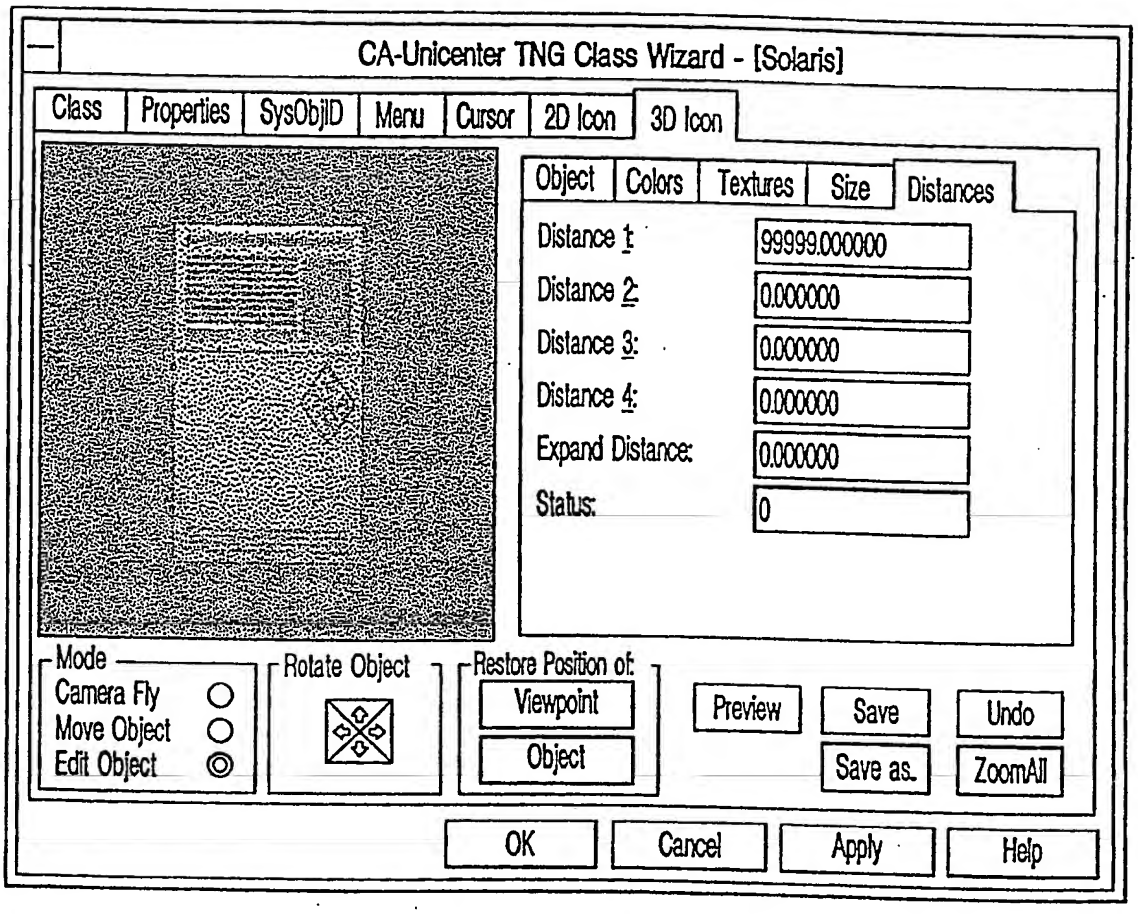

CA-Unicenter TNG Class Wizard - [Solaris]
Class
Properties
SysObjID
Menu
Cursor
2D Icon
3D Icon
Object
Colors
Textures
Size
Distances
Distance 1:
99999.000000
Distance 2:
0.000000
Distance 3:
0.000000
Distance 4:
0.000000
Expand Distance:
0.000000
Status:
0
Mode
Camera Fly
Move Object
Edit Object
Rotate Object
Restore Position of:
Viewpoint
Object
Preview
Save
Undo
Save as..
ZoomAll
OK
Cancel
Apply
Help

FIG. 10M

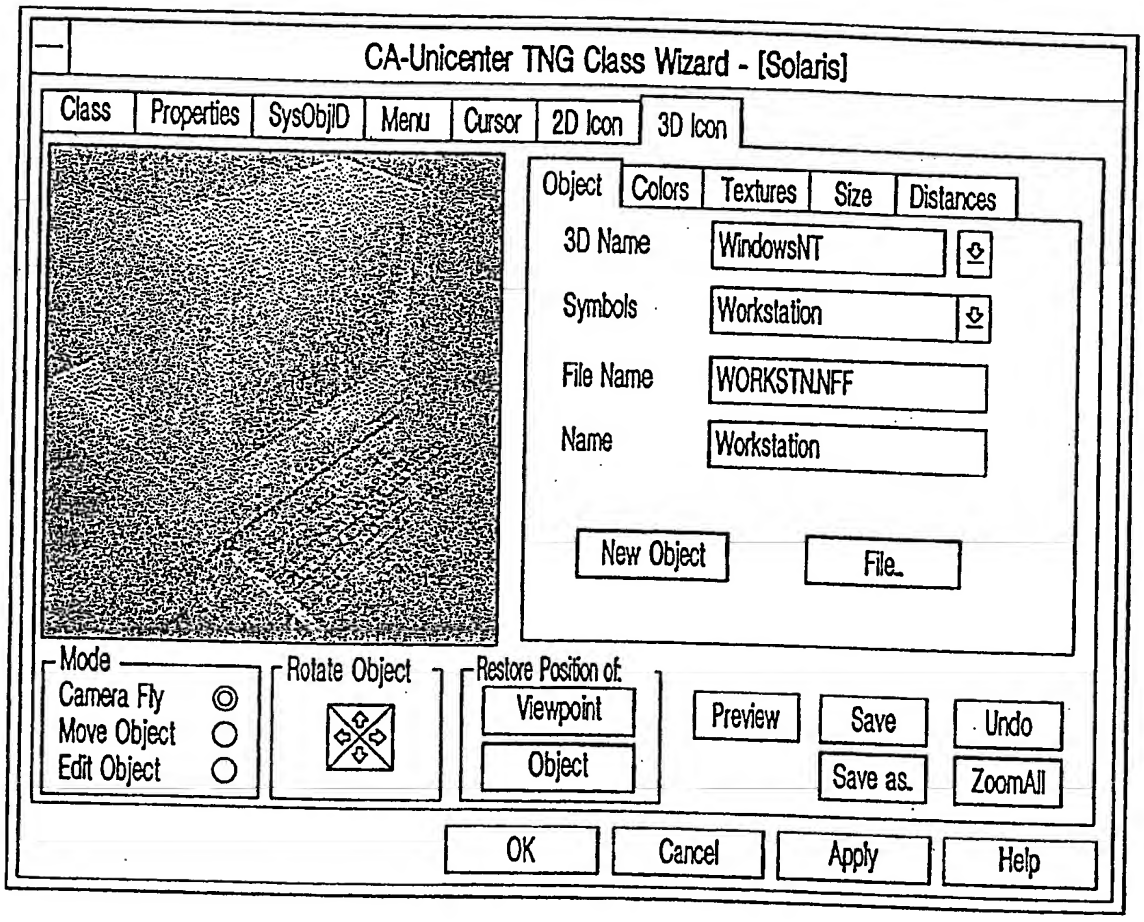

CA-Unicenter TNG Class Wizard - [Solaris]
Class
Properties
SysObjID
Menu
Cursor
2D Icon
3D Icon
Object
Colors
Textures
Size
Distances
3D Name
WindowsNT
Symbols
Workstation
File Name
WORKSTN.NFF
Name
Workstation
New Object
File...
Mode
Camera Fly
Move Object
Edit Object
Rotate Object
Restore Position of:
Viewpoint
Object
Preview
Save
Undo
Save as...
ZoomAll
OK
Cancel
Apply
Help

FIG. 10N

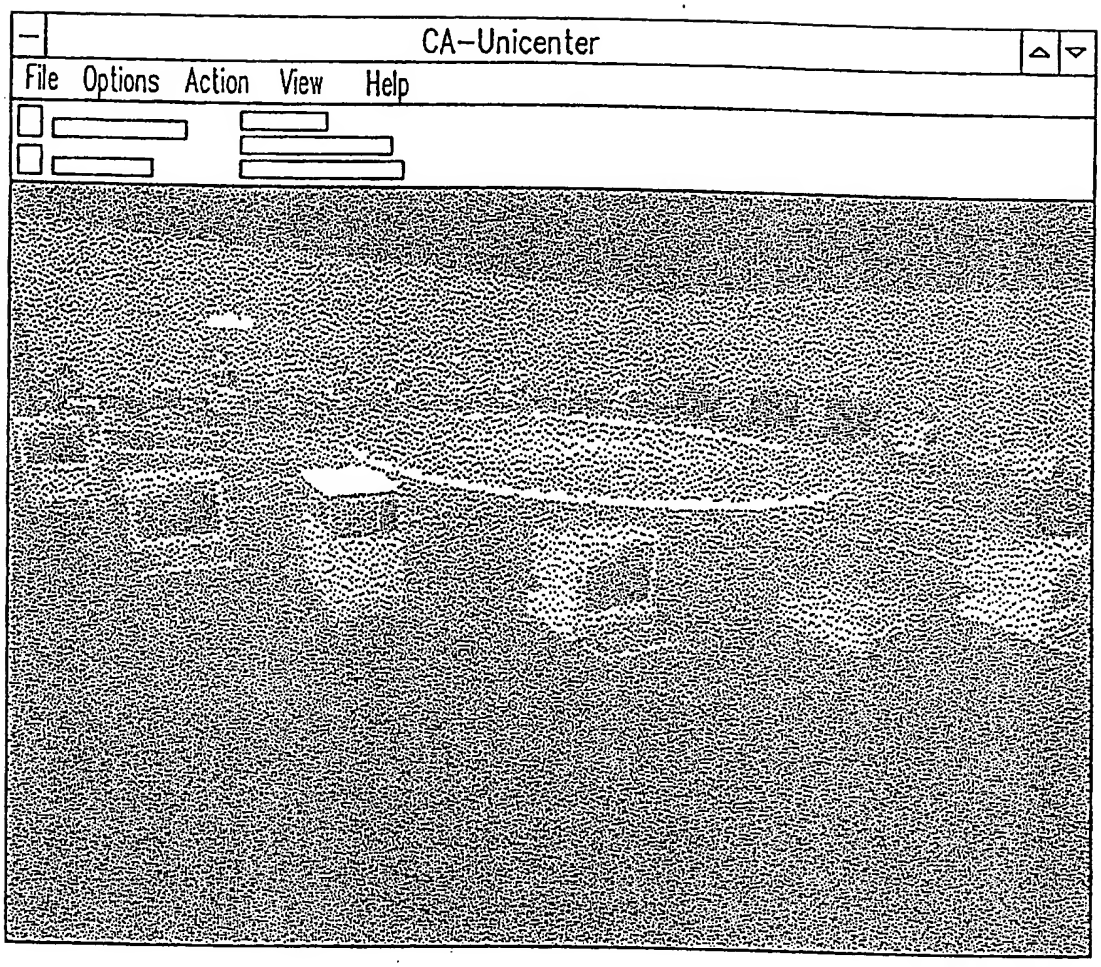


FIG. 11

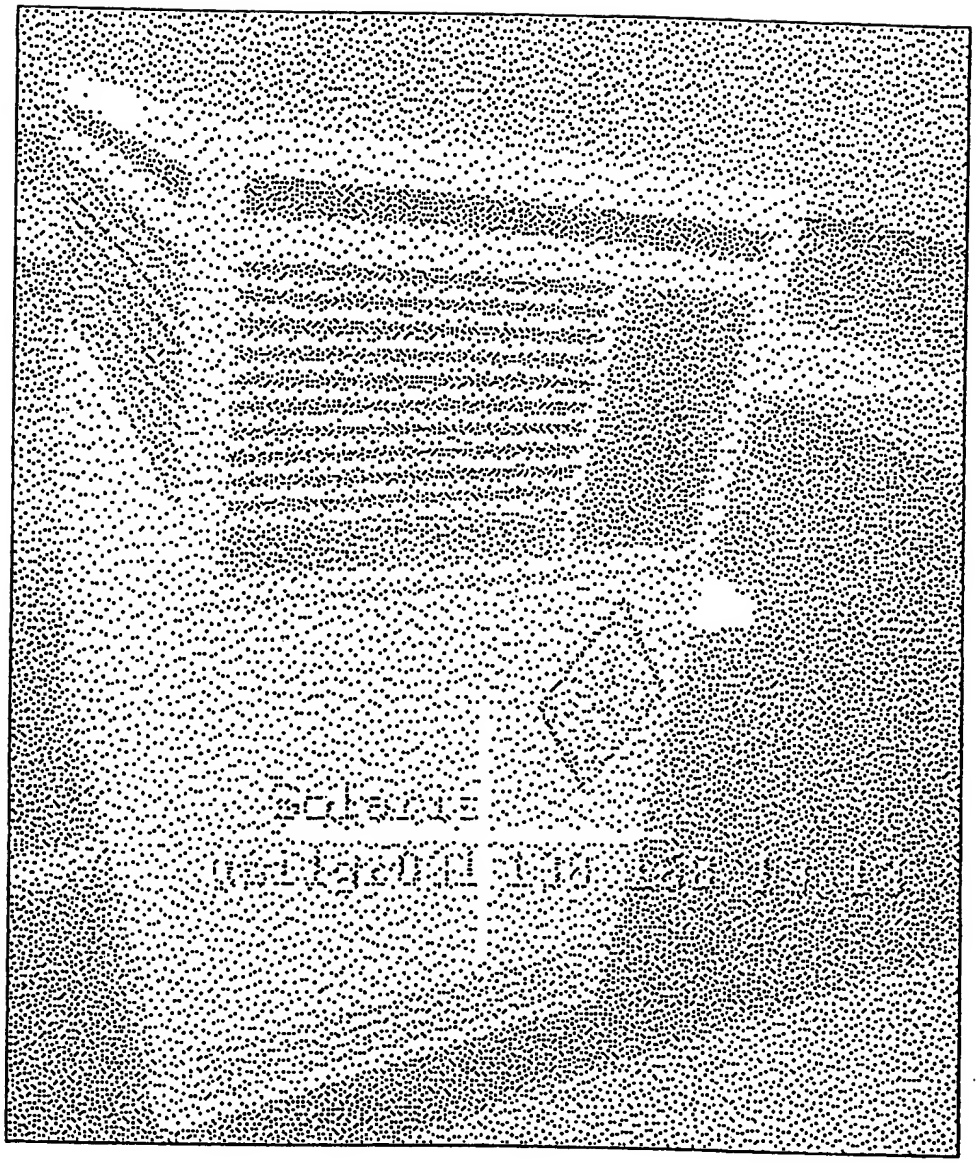


FIG. 12

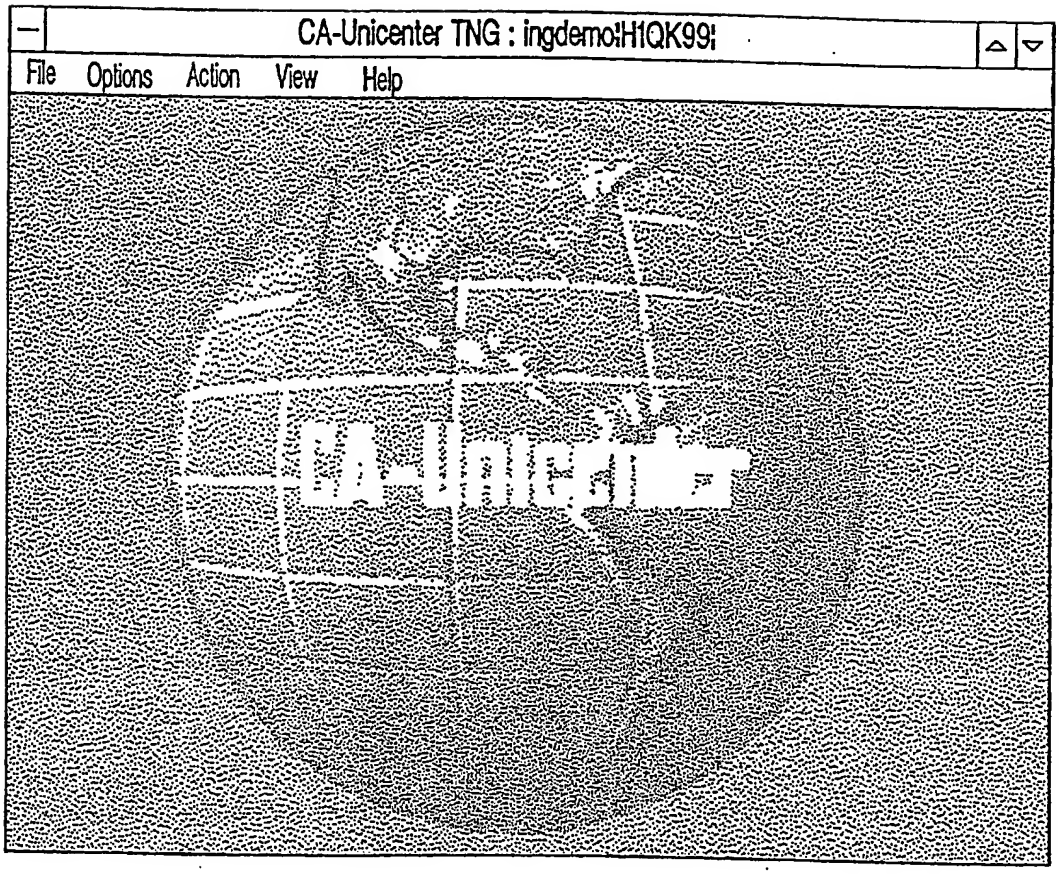

CA-Unicenter TNG : ingdemo:H1QK99:
File
Options
Action
View
Help

FIG. 13

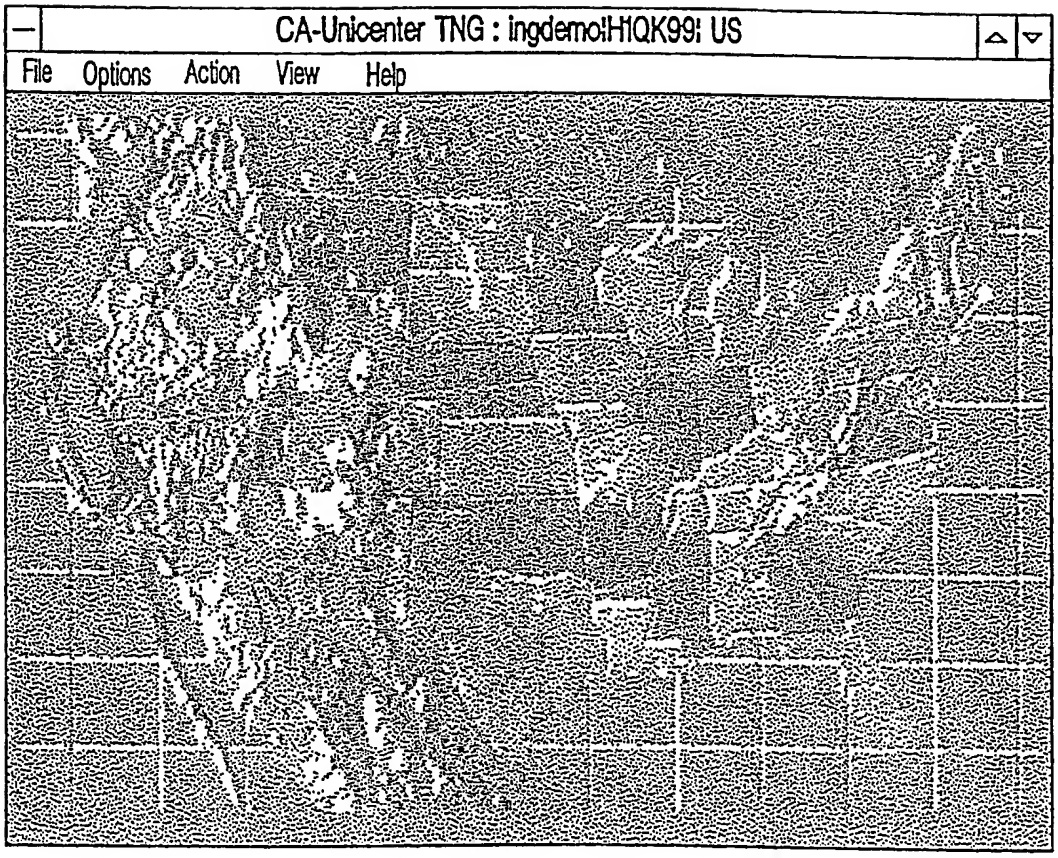

CA-Unicenter TNG : ingdemo:HIQK99: US
File
Options
Action
View
Help

FIG. 14

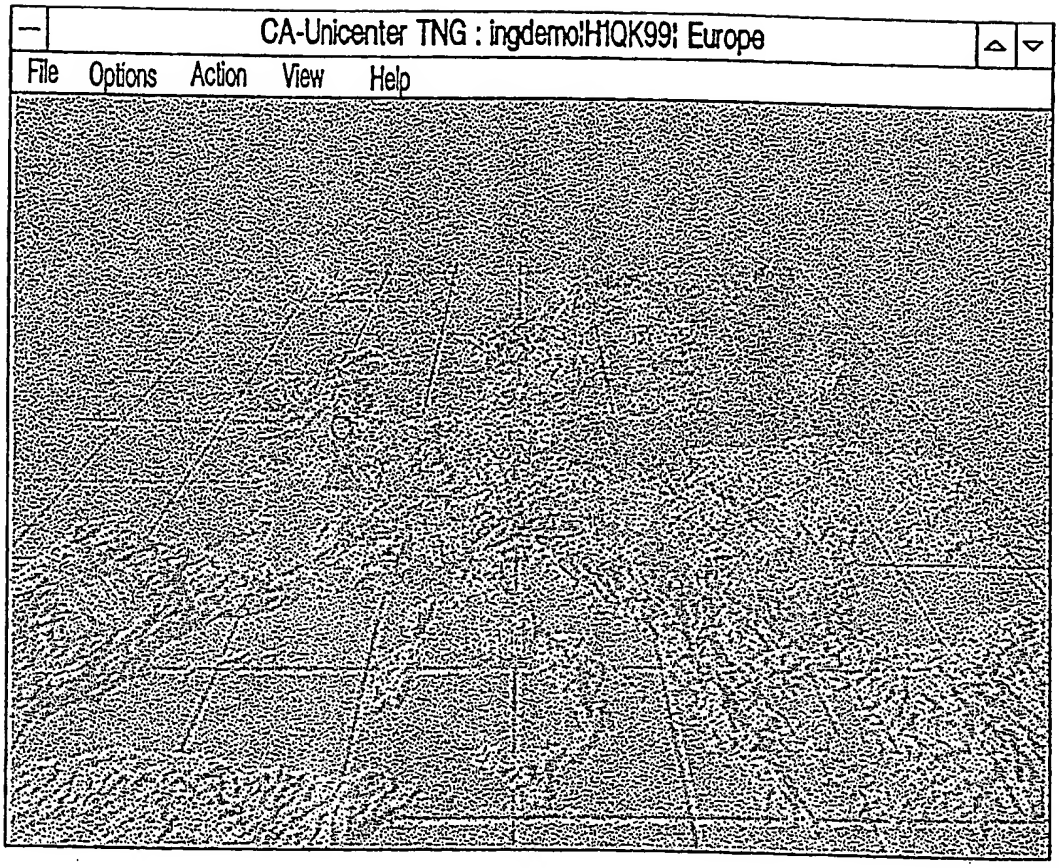

CA-Unicenter TNG : ingdemo!H1QK99! Europe
File
Options
Action
View
Help

FIG. 15

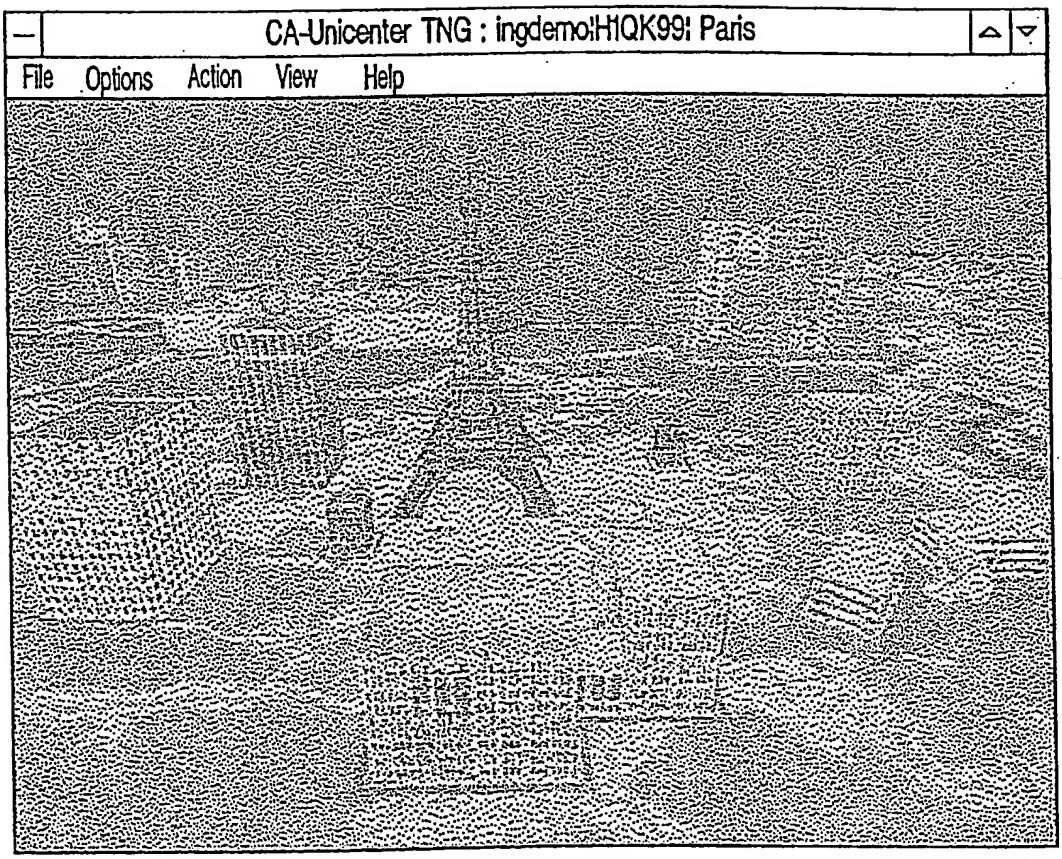

CA-Unicenter TNG : ingdemo:H1QK99: Paris
File
Options
Action
View
Help

FIG. 16

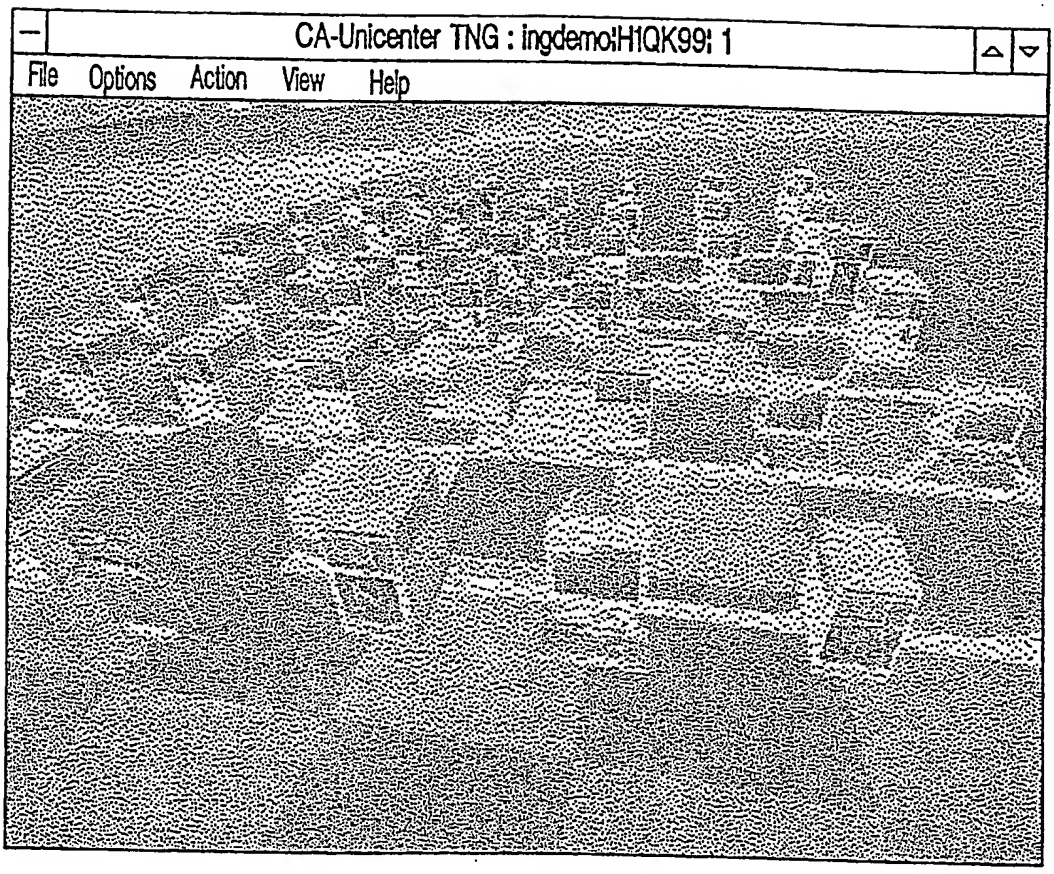

CA-Unicenter TNG : ingdemo:H1QK99: 1
File
Options
Action
View
Help

FIG. 17

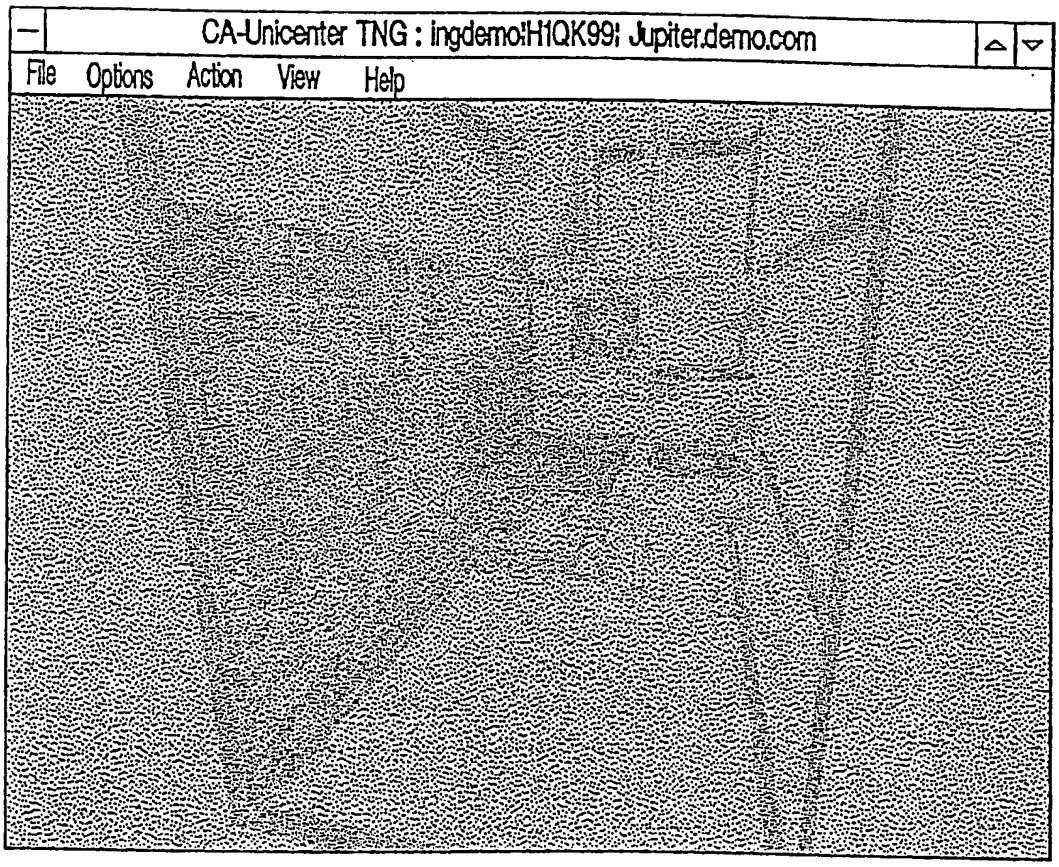

CA-Unicenter TNG : ingdemo:H1QK99: Jupiter.demo.com
File
Options
Action
View
Help

FIG. 18

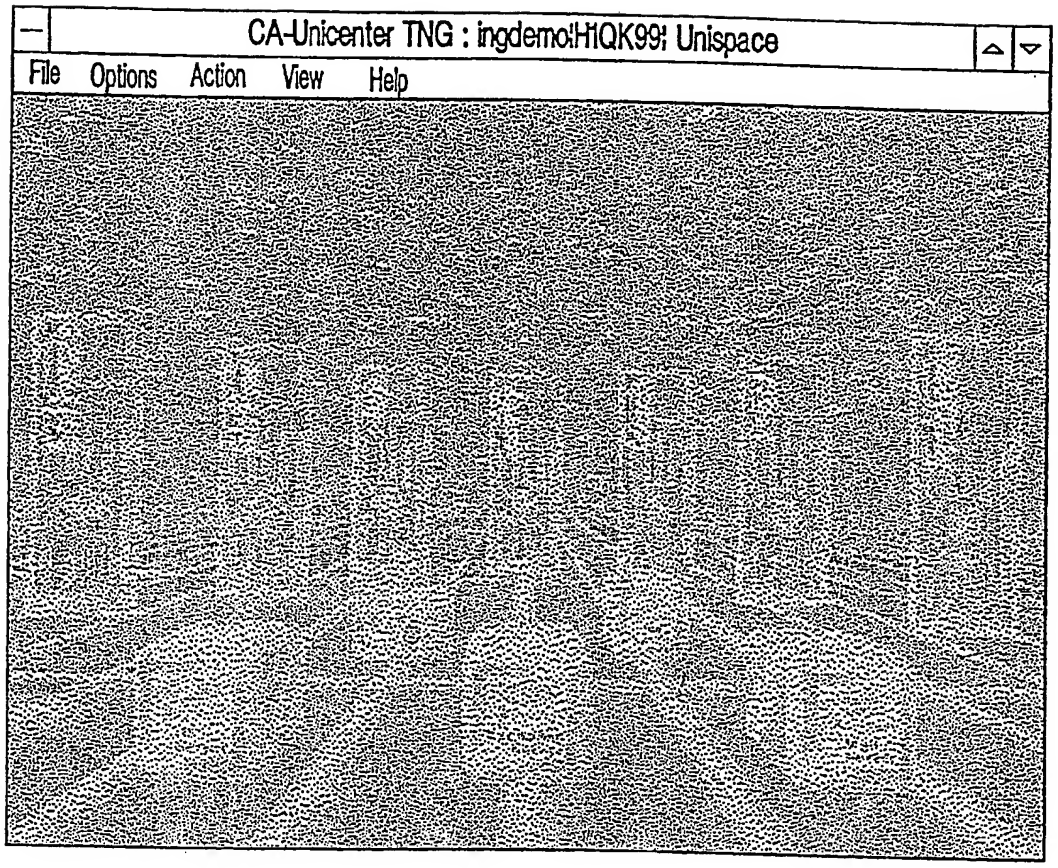

CA-Unicenter TNG : ingdemo:HIQK99: Unispace
File
Options
Action
View
Help

FIG. 19

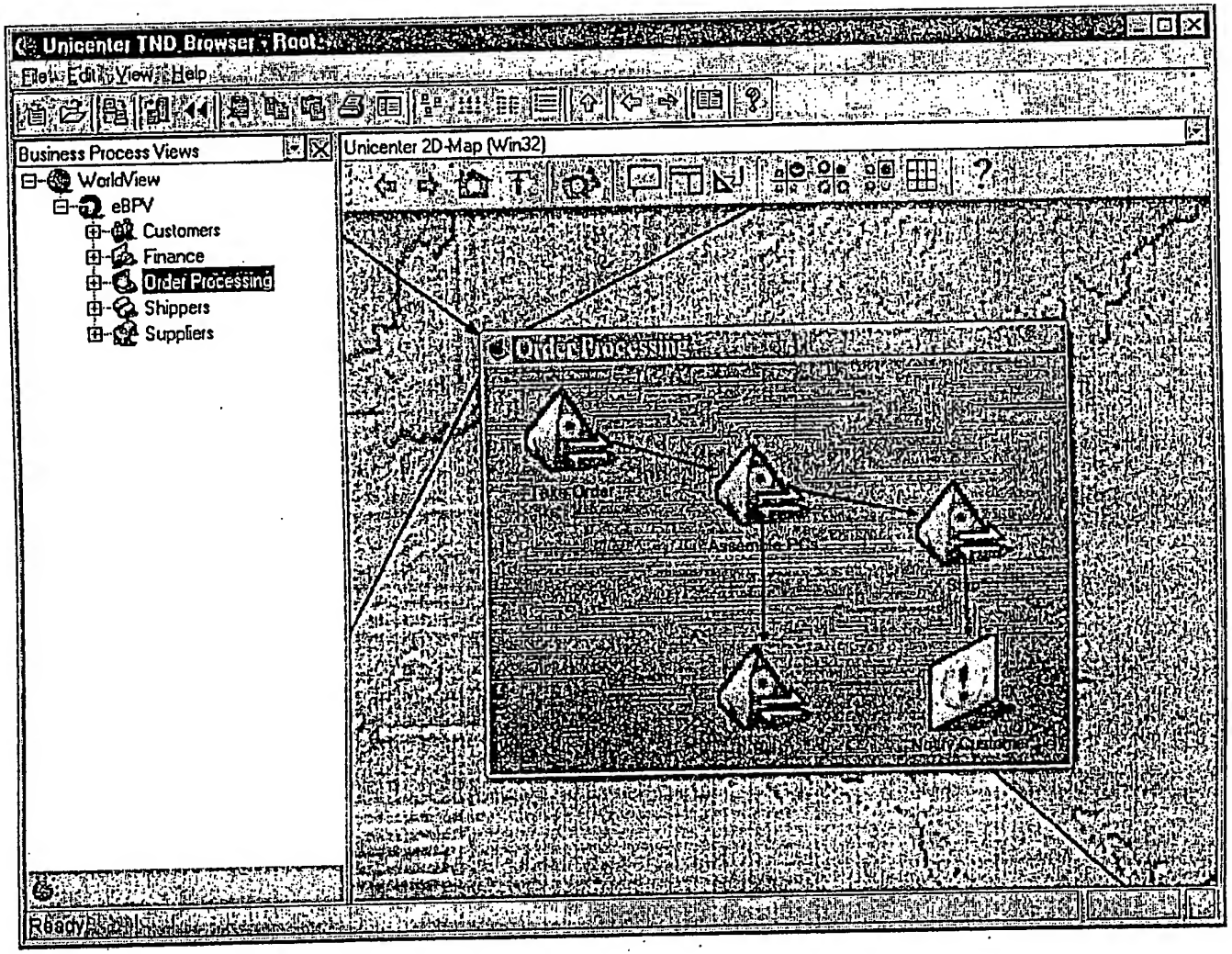

Unicenter TND Browser : Root
File Edit View Help
Business Process Views
WorldView
eBPV
Customers
Finance
Order Processing
Shippers
Suppliers
Unicenter 2D-Map (Win32)
Order Processing
Take Order
Assemble PCs
Ready

Figure 20

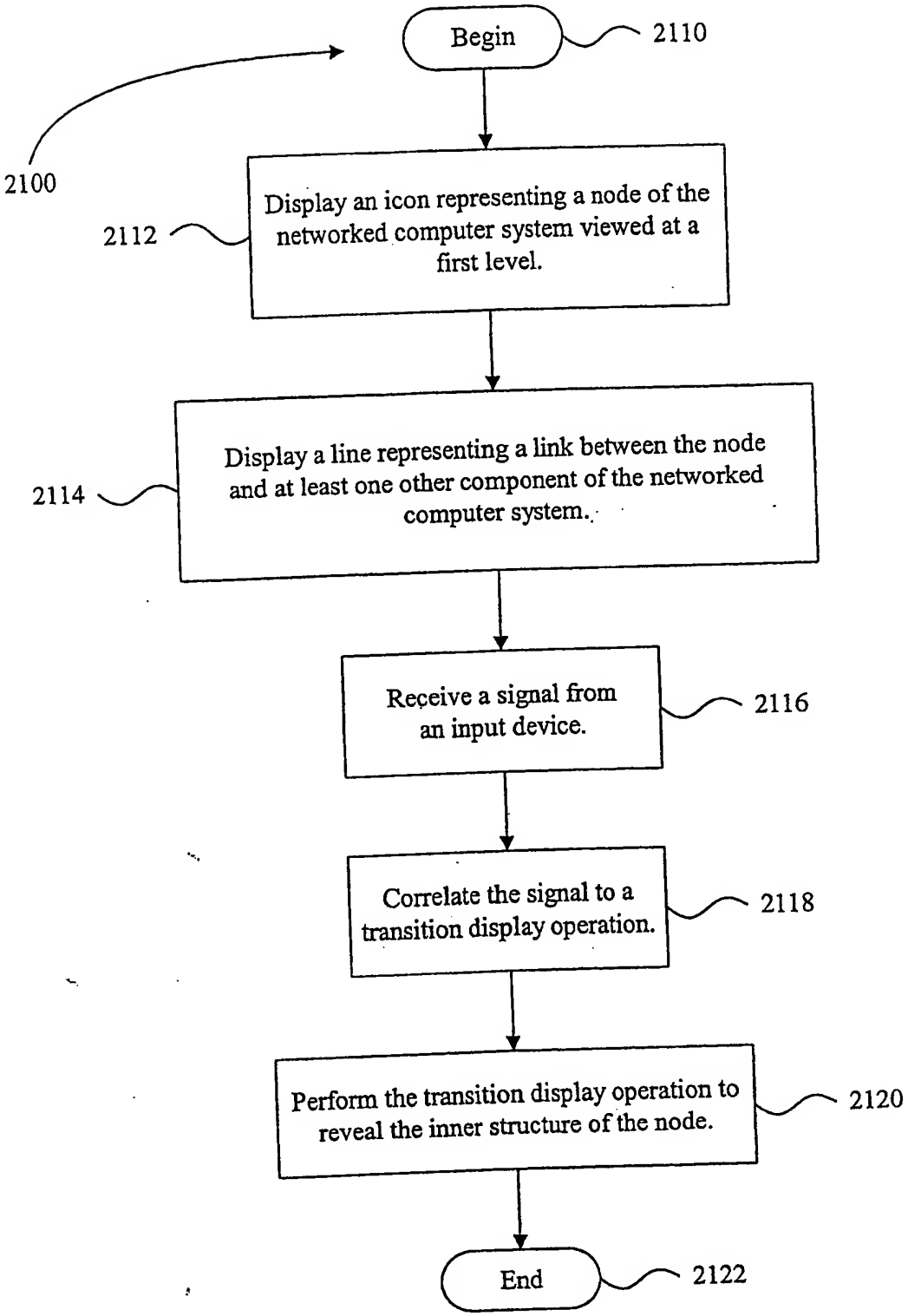

Begin
2110
2100
Display an icon representing a node of the networked computer system viewed at a first level.
2112
Display a line representing a link between the node and at least one other component of the networked computer system.
2114
Receive a signal from an input device.
2116
Correlate the signal to a transition display operation.
2118
Perform the transition display operation to reveal the inner structure of the node.
2120
End
2122

Figure 21